EDITORIAL INDEX—PAGE 29

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COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR FLEET OPERATORS

OCTOBER 1948

Beat your competition!— See pgs. 30-31

Have you checked with your Reo truck dealer lately?

What Reo dealers have to say about Reo trucks is news you'll cheer as business becomes harder to get.

Loads, roads, speed limits and drivers being somewhat equal, you'll find it's the truck that makes the difference when bidding on, and holding a job.

Better hear from your local Reo dealer the cold-blooded facts on how to beat your competition to the *money-making* hauling jobs. Reo Motors, Inc., Lansing 20, Michigan.

REO

Only Dodge Builds "Job-Rated" Trucks

"Job-Rated" TO SAVE MONEY...

You'll save money with a truck that's built *to fit* your job. Any truck that's too big for its job, will waste gas and oil. Or, if it's too small it won't stand up . . . maintenance costs will be excessive. There's no need to drive expensive "misfits." Just see your Dodge dealer. Tell him what you haul . . . the weight of your loads . . . and your hauling conditions. He will recommend the right "*Job-Rated*" truck for your job.

"Job-Rated" TO SAVE TIME...

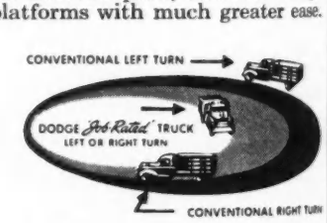
Dodge "*Job-Rated*" trucks save valuable time, too, simply by keeping out of the repair shop. They save time, because each truck is engineered with exactly the *right* one of 7 *different* truck engines. Each one has exactly the right clutch, transmission, rear axle and gear ratio to haul a specific load, over specific roads, with time- and money-saving efficiency.

"Job-Rated" TO LAST LONGER...

Naturally, a truck that fits the job . . . a truck "*Job-Rated*" with exactly the *right* units, from engine to rear axle . . . will *last longer!* This means lower upkeep costs. It also means on-the-job dependability and satisfaction. Ask your Dodge dealer to show you *why* the *right* "*Job-Rated*" truck can save money, save time, and last longer . . . on *your* hauling job!

You'll profit from these NEW features, too!

New "cross-steering," with shorter wheelbases that accommodate full-size bodies, enable you to turn in *much smaller* circles. You can park, back into alleys or up to loading platforms with much greater ease.



Front axles have been moved back, engines forward. More load is on the front axle . . . giving *much* better weight distribution. With wider tread axles, longer springs, and "Air-O-Ride" seats you get a marvelous new "cushioned ride."

New "Pilot-House" cabs, with nearly 200 square inches more windshield glass area, give tremendously increased vision . . . and safety!

VISIT THE BIG DODGE "*JOB-RATED*" TRUCK AND EQUIPMENT SHOW
Madison Square Garden, New York City
November 18-21, 1948

For the location of the Dodge dealer in your community, consult the yellow pages of your local telephone directory

DODGE "Job-Rated" TRUCKS

COMMERCIAL CAR JOURNAL

with which is combined Operation & Maintenance

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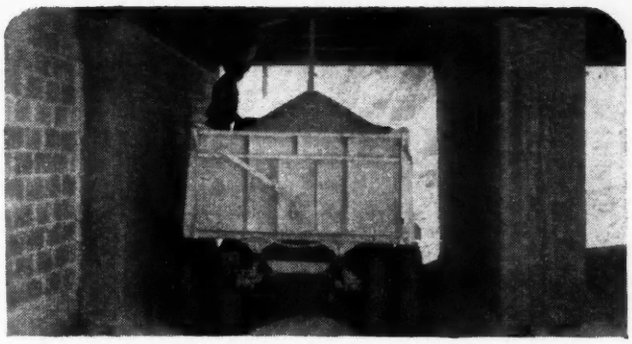


Tons and tons of sharp fine sand—

a tough assignment, but

St.Paul HYDRAULIC Dumps stay on the job!

Ed Heaton has mined a mountain of foundry sand in his days and he knows a lot about heavy hauling.

".... I bought my first St.Paul Hoist in 1915," he states, "and have been using them on my trucks ever since ... the sand we haul is very hard on equipment. The grains are fine and sharp and they seem to get into everywhere.... I've had good service from my St.Paul Units and I am well satisfied with them."

Pictured is St.Paul's Model 102 Heavy Duty Hoist with an 8-10 cu. yd. St.Paul Body. Write for literature or see your St.Paul Distributor.

ST.PAUL DIVISION
GAR WOOD INDUSTRIES, INC.
2207 University Ave. S.E., Minneapolis 14, Minn.

ADVERTISEMENT

How to beat your

With the increased scramble for business, what are your plans for edging out your competitors?

Here, two competition-wise truck companies use More-Load design Reo trucks to meet and beat their tight operating schedules. Drivers like the way Reo trucks respond to controls . . . lessen fatigue on long cross-country hauls. Reo More-load design trucks carry a full payload in a more compact unit.

With many other trucking firms fighting for the same business, how do you expect to swing the job your way?

The distance from pick-up point to delivery point is the same for your local competitors. His drivers probably are no better or worse than your own drivers. The same speed limit and the same highways keep running-time pretty much the same for all trucking companies hauling to a certain destination.

The answer plainly resolves itself down to the type of service you can give your customer. And fast, efficient service depends on the truck you use for the job.

It's true that every truck manufacturer claims certain advantages for his vehicle. Your job is to buy the truck with the most basic advantages for your own hauling job. Be sure not to pick a truck on price alone, or one that screams "features" at you when they turn out to be yearly "identification changes."

Certain trucks in your own fleet may be doing what you consider a good job. But how can you be sure that another truck can't do much better?

It will be well worth your time to examine the line of Reo trucks before you make a decision on fleet replacements. Reo trucks have a formidable record of success in every field of the trucking business, so look closely before you buy *any* trucks.

Consider these points before you buy

To beat competition you need the best drivers available, tight schedules, top maintenance and a truck like Reo, which has a shorter wheelbase than comparable models of other trucks. Reo More-Load design trucks not only give you a greater maneuverability advantage with their short wheelbase—*they carry a full payload in a more compact unit.*

The last A.T.A. National Truck Roadeo pointed-up the importance of a short wheelbased truck. The short wheelbase of Reo More-Load design trucks

★ ★ ★

← *Let your Reo truck salesman, a factory-trained expert, help you select the right Reo More-Load design truck for your fleet. The Reo line of trucks includes medium-duty sizes, heavy-duty sizes and very heavy-duty sizes. Buyers have a wide choice of engines, axles, wheelbase lengths, cab-to-axle dimensions and truck and tractor chassis. Reo trucks are available for quick delivery in most models.*

competition to the punch!

helped champion drivers to park, back, drive, jockey and steer to victory. Drivers who won *all* first and second place awards at the Roadeo drove Reo trucks in preference to all other makes offered.

The Roadeo tests were no more than everyday driving problems compressed into a difficult 4-minute proving ground.

Another chance to get a lick in

Fast, easy and efficient maintenance of your trucks is the extra ace in your hand to get an edge on competition. Reo engineers gave long and serious thought to this problem before they designed the exclusive Reo cowl-hinged hood that lifts from the front bumper line.

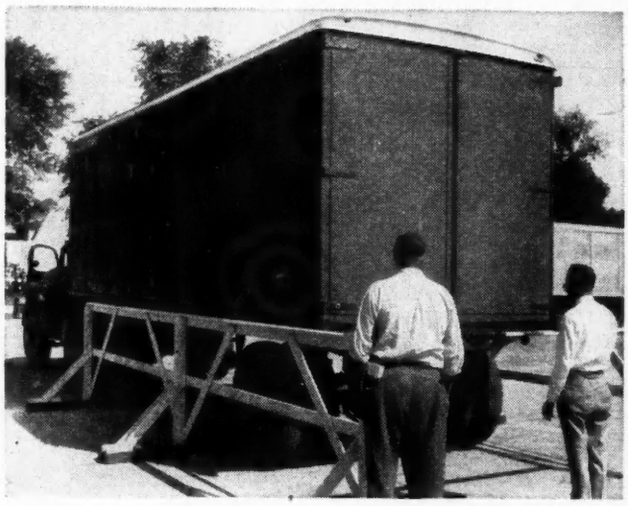
A flip of the hood of a Reo More-Load design truck places the engine in an easily accessible position for mechanics to go to work *in a hurry*—with plenty of elbow room. On these Reo trucks, it is *not* necessary to strip off fenders and other parts to service and maintain the engine for normal, run-of-mill work.

Briefly, this is the story of a trucking man's truck. This line of Reo trucks will do a rugged, round-the-clock job . . . do it better . . . and help you get new business on the sound basis that your fleet will deliver the customer's goods in a more satisfactory manner than your competitor.

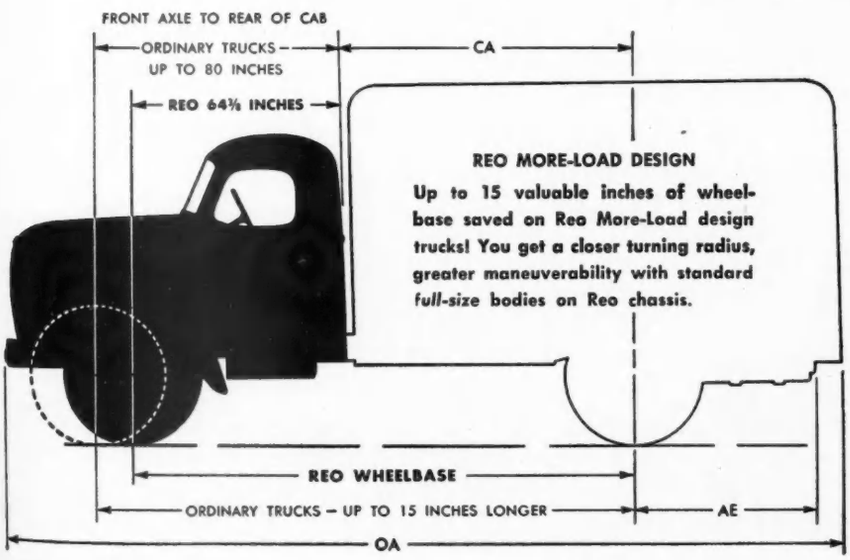
Call your nearest Reo dealer now . . . hear the *complete* Reo story from him. Reo Motors, Inc., Lansing 20, Michigan.

★ ★ ★

Here's a way to make your fleet pay a profit—use record-breaking Reo More-Load design trucks. A Detroit cross-country trucking company made 19 round trips to Los Angeles without a single major parts replacement or repair. Look at Reo before you order any trucks.



"Easy does it", spectators say as they watch a champion Truck Roadeo driver back his More-Load design Reo truck into a simulated dock-and-alley test. Truck Roadeo winners know how well Reo trucks back, park and steer.



REO MORE-LOAD DESIGN

Up to 15 valuable inches of wheelbase saved on Reo More-Load design trucks! You get a closer turning radius, greater maneuverability with standard full-size bodies on Reo chassis.

★

REO
TRUCKS AND BUSES

WINTER'S TOUGH ON TRUCKS— GET 'EM READY NOW!

THE RIGHT TRUCK FOR EVERY JOB

International builds the *only* complete truck line—a truck of the right type, size and power for every delivery and hauling job.

***International*— Standard of the Highway**

TRUCKS must give top-grade performance in winter. Let *International* winterize them *now*. International Dealers and Branches are ready:

- With precision tools and machines to analyze and correct truck problems.
- With factory-trained mechanics.
- With International Parts that fit accurately, wear better and last longer because they are just like the originals in International Trucks.
- With International Exchange Units—rebuilt by factory methods to perform like new and to cost you less than new units do.
- And with International-Approved Truck Accessories to increase efficiency, safety and driver-comfort.

For expert maintenance service that provides truck-stamina for tough winter operation, take your trucks to your nearby International Truck Dealer or Company-owned Branch *NOW!*

Tune in James Melton on "Harvest of Stars." CBS Wednesday Evenings.

INTERNATIONAL Trucks

Motor Truck Division • INTERNATIONAL HARVESTER COMPANY • Chicago

CCJ READER DIGEST

Check Your Knowledge

Why do most factory engineers recommend changing brake fluid periodically? ..... P. 44

Are lughead drivers causing engine maintenance problems in your fleet? See Bulletin Board ..... P. 53

How do most fleets prepare for painting? ..... P. 69

Do You Know the Answers?

How does Continental's new air-cooled engine series save space, weight and parts inventory? ..... P. 86

What's unusual about the new Dodge 6-wheelers? ... P. 74

In an election year, keep an eye on Washington. Are you up on the latest runarounds? See ..... P. 80

The Well-Lighted Shop

by J. C. FORBES and J. L. TUGMAN, General Electric Co.

HERE'S a practical discussion by two lighting engineers on just what can and should be done in the fleet shop to improve efficiency through proper lighting technique. Proper intensity of light for varying types of work, reduction of glare from both natural and artificial lighting, and elimination of shadows are covered in down-to-earth fashion that makes must reading for every fleetman. See page 54.

A Systematized Safety Program

by NATIONAL COUNCIL OF PRIVATE MOTOR TRUCK OWNERS, INC.

IN this issue begins the first of a series of 12 "packaged" safety instructions designed to give fleetmen, large and small, all the essentials needed for a complete safety program. Management, this text points out, has a threefold responsibility in safety—to the public, to employes and as a good business measure. Then it goes on to unravel specific details for fulfilling this responsibility by such means as proper vehicle selection and inspection and proper driver selection and training. See page 49.

Factory Service Tips

THE first of a continuous series of technical articles developed from manufacturers' service bulletins covers new developments, factory changes, service tips and replacement kits designed by engineers to improve the operation of their trucks. Autocar, Chevrolet, FWD, International Harvester and McQuay-Norris are included in this issue. Maintenance notes on these and other truck and component parts makers will be included in following issues. This material will supplement your manuals and will keep your mechanics up to date on the latest factory information. File it for future reference. P. 38.

Inspectors from Missouri

by L. H. HOUCK, CCJ State Correspondent

KEEPING track of the 2642 pieces of automotive equipment operated by the Missouri State Highway Dept. is a man-sized job and it is assigned to four traveling general inspectors from headquarters, assisted by a number of traveling mechanics operating from 10 division garages. How they do it, what authority they have, how they make recommendations, what they do about overtime and many other details is the subject of the unusual story appearing on page 64.

Job Par for Drivers Boosts Efficiency

by T. J. BRESLIN, The Atlantic Refining Co.

THE Atlantic Refining Co. set up a job par for its drivers in the Philadelphia area by making time studies of (1) average vehicle speed in various sections of the territory, (2) plant time for checking in, loading the vehicle, etc., (3) delivery time, including unloading and customer contact, and (4) plant time at the end of the day for cleaning up, checking records, etc. With these averages as a basis, individual driver performance can be measured with surprisingly accurate results. The drivers were kept informed of the system and have offered excellent cooperation. For full details see page 34.

Servicing Shop Equipment

by M. K. SIMKINS, Commercial Car Journal

THIS sixth in a series of articles on Precision Tools for the Modern Shop covers factory recommendations for servicing such shop equipment as engine testers, valve refacers, hydraulic jacks and presses, paint spray equipment, lathes and pressure lubricators.

The information, designed to help you improve the life and operation of your tools, provides an authoritative guide to lubrication, adjustment, cleaning, repairing and using the more important pieces of equipment. See page 46.

Selecting Safe Drivers

by Dr. FLOYD L. RUCH and Dr. CLARK WILSON, Jr.

HERE is an entirely new approach to the important subject of selecting safe drivers. The Ruch-Wilson system requires no expensive equipment, and supervisory personnel need little training in administering the tests, which come in booklet form. Based primarily on the theory that a driver's ability to interpret what he sees is far more important than mere speed of reaction, the tests cover such subjects as depth vizualization, recognition of detail, eye-hand coordination steadiness and manual dexterity. The cost is only $1 per driver tested. See page 66.

MINUTES TO RUN MILES													
Miles Travelled	Central City	South Phila.	Tioga & Kens.	West Phila. Logan & Gtn.	Oak Lane Frnkd.	Manyk. Roxbh. Balt. & West Chester Pikes	Lancaster & Chester Pikes	SUBURBAN					
			At	Determined	Averages		Rates	of	Speed				
	10	11	13	14	15	16	17	18	19	20	21	22	24
1	6	5	5	5	4	4	4	3	3	3	3	3	3
2	12	11	9	9	8	7	7	7	6	6	6	5	5
3	18	16	14	13	12	11	11	10	9	9	9	8	8
4	24	22	18	17	16	15	14	13	13	12	11	11	10
5	30	27	23	21	20	19	18	17	16	15	14	14	13
6	36	33	28	26	24	22	21	20	19	18	17	16	15
7	42	38	32	30	28	26	25	23	22	21	20	19	18
8	48	44	37	34	32	30	28	27	25	24	23	22	20
9	54	49	42	39	36	34	32	30	28	27	26	25	23
10	60	55	46	43	40	37	35	33	32	30	29	27	25
11	66	60	51	47	44	41	39	37	35	33	31	30	28
12	72	66	55	51	48	45	42	40	38	36	34	33	30
13	78	71	60	56	52	49	46	43	41	30	37	35	33
14	84	77	65	60	56	52	49	47	44	42	40	38	35
15	90	82	69	64	60	56	53	50	47	45	43	41	38
16	96	88	74	69	64	60	56	53	51	48	46	44	40
17	102	93	78	73	68	64	60	57	54	51	48	46	43
18	108	99	83	77	72	67	64	60	57	51	51	49	45
19	119	104	88	81	76	71	67	63	60	57	54	52	48
20	120	109	92	86	80	75	71	67	63	60	57	55	50
21	126	115	97	90	84	79	74	70	66	63	60	57	53
22	132	120	102	94	88	82	78	73	70	66	63	60	55
23	138	126	106	99	92	86	81	77	73	69	66	63	58
24	144	131	111	103	96	90	85	80	76	72	69	66	60
25	150	137	115	107	100	94	88	83	79	75	72	68	63
26	156	142	120	111	104	97	92	87	82	78	74	71	65
27	162	148	125	116	108	101	95	90	85	81	77	74	68
28	168	153	129	120	112	105	99	93	88	84	80	76	70
29	174	159	134	124	116	109	102	97	92	87	83	79	73
30	180	164	138	129	120	112	106	100	95	90	86	82	75

FIG. 1 (top) shows results of time study to determine average speeds in different zones (top line) and conversion table to show minutes required to travel through various zones

PLANT TIME PER LOAD (MINUTES)											
NUMBER OF LOADS	TRUCK SIZE (GALLONS)										
	1000	1250	1500	2000	2200	2400	2700	3100	3300	3800	5100
1	30	32	33	38	41	42	43	45	45	46	52
2	60	64	66	76	82	84	86	90	90	92	104
3	90	96	99	114	123	126	129	135	135	138	156
4	120	128	132	152	164	168	172	180	180	184	208
5	150	160	165	190	205	210	215	225	225	230	260
6	180	192	198	228	246	252	258	270	270	276	312
7	210	224	231	266	287	294	301	315	315	322	364
8	240	256	264	304	328	336	344	360	360	368	416
9	270	288	297	342	369	378	387	405	405	414	468
10	300	320	330	380	410	420	430	450	450	460	520

FIG. 2 (above) indicates average plant time required for various size loads. Plant time includes ringing-in, getting orders, checking vehicle, loading and checking at dock and gate

Job Par

WHETHER a common carrier or private carrier, every fleet operator's prime concern is to get as many payloads hauled daily, within normal delivery hours, as possible. Of course, there are times, especially with a fleet delivering fuel oil, or a similar seasonal-demand product, when overtime hours are unavoidable. Even under such conditions, a well-organized and efficient dispatching and chauffeur control system will pay high dividends.

Within the Philadelphia, Suburban and South Jersey Region of the Atlantic Refining Co. we determined to devise a method of actually measuring chauffeur performance in order to assure the fact that we were receiving adequate productivity in the delivery of our various products. This task required not only satisfactory daily output but also demanded that the results secured should be accomplished without vehicle abuse or excessive accident toll.

To this end, we felt that the prime necessity was to secure the under-

by T. J. BRESLIN
Supt. Bulk Plants & Delivery Dept.
The Atlantic Refining Co.

Detailed study of time consumed in loading, driving, unloading and other product delivery operations sets par for each step to rate drivers and nets most efficient daily production output

for Drivers Boosts Efficiency

standing and cooperation of our chauffeur organization. Since by the use of Chauffeur Trainers we felt that we possessed an adequate system for training new personnel and retraining veteran chauffeurs, this latter step of measuring chauffeur performance was but a refinement of the original task of the chauffeur training organization.

Road Speed and Time Studied

WE WENT about the job as scientifically as we knew how. First, we divided Philadelphia's municipal and suburban areas into zones to determine the average rate of speed that our vehicles would be obliged to travel when in that area. Two typical trucks were used for the study. In each vehicle there was its regular chauffeur and a time study man.

Each vehicle cruised the streets within each zone, making the best time possible within both our established vehicle speed limits and the various local maximum speed ordinances. The time study man made a note of the time required to cover every mile travelled within every zone throughout the city.

After each zone was thoroughly covered, an average per-mile travel, in minutes, within each zone was calculated. Thus, not only did we obtain a figure giving the average time required to travel a mile within all of the zones studied but, also, an average time required to travel any distance, including to and from the plant. The results of this study are tabulated in Fig. 1.

Other Time Studies

HOWEVER, our chauffeurs have other duties in addition to driving. They are obliged to check their vehicles, for which ample time must be allowed. Prior to unloading at a customer's establishment, they first must find out into which tanks the customer wants the product unloaded. A certain amount of time is required in getting the hoses to the tanks. Chauffeurs must collect cash or get receipts for each load. At the end of the day they must turn in their cash receipts, fill out certain forms, and park their vehicles in the proper place. All of these duties take time, so, while the road speed and running time studies were being made, we started time studies to get the above information. We divided the various chauffeur duties into four main categories:

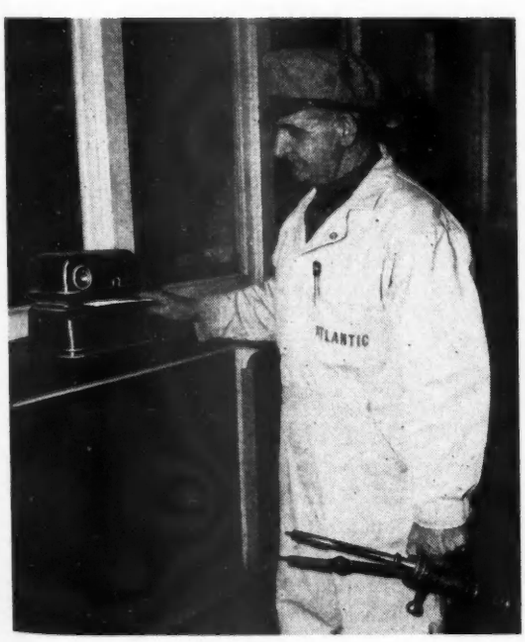
Plant Time, which would include all operations incident to picking up the vehicle, loading and checking it, and driving to the plant gate.

Customer Contact Time, which would embrace all the steps to contacting the customer at his residence or place of business to consummate the acceptance and payment for the product.

Flow Time, the actual time it takes to unload specific quantities of our products.

Clean-up Time, the time it takes the chauffeur to complete his duties with the cashier and shipper and park his vehicle for the night.

(TURN TO NEXT PAGE, PLEASE)

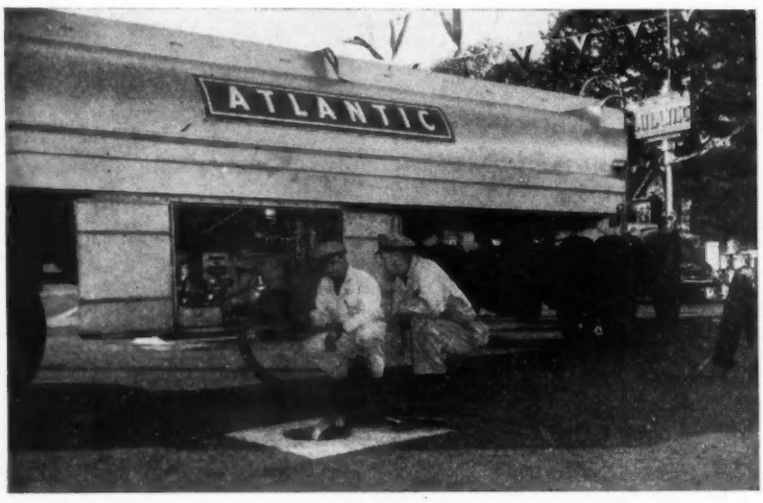


***DRIVER** rings in at time clock, proceeds at once to plant area where loading duties will consume average of 30 to 52 minutes prior to departure*

***NEXT** he starts out with typical Atlantic tractor-trailer rig for scheduled delivery trips for the day*

Job Par for Drivers . . .

Continued from page 35



DELIVERY time has been carefully estimated for both metered and gravity flow as well as customer contact (see Figs. 3 & 4)

BACK at the plant he attends to business details and clean up for which part time has been set

Plant Time Study

FIRST, we worked out a series of averages on the time required to handle all the details incident to loading a vehicle and getting it under way. The steps performed by our chauffeurs are as follows:

1. Ringing in at the time clock.
2. Getting shipping orders.
3. Walking to parking lot.
4. Checking gas, oil, radiator, tires and brakes.
5. Loading at rack.
6. Checking load at platform.
7. Checking out at the gate.

These steps were timed under all kinds of weather conditions, with all types and sizes of vehicles, as well as under peak and low demand seasons. Of course, the chauffeurs, shippers, checkers and all concerned were consulted, and their whole-hearted cooperation obtained. Eventually a set of averages was worked up based on the principle variable, truck size. Fig. 2 shows the final tabulation.

Customer Contact Time Study

THE next study sought to determine the average time required to consumate the transaction between our chauffeur and our customer. This study showed two steps were involved in the transaction: customer contact and the actual delivery of the product or products. The first was quite variable, the other constant. If the customer was not busy, contact time was short, perhaps a minute or two; if busy, contact time might take 10 min. or more. The flow of the gasoline, fuel oil, or other product could be readily measured. Consequently, two separate studies of these steps were made.

The customer contact study showed that chauffeurs normally make seven steps in dealing with the customer—four before the delivery of the product and three after. They are:

1. Drive into or up to customer's premises, and park vehicle without obstructing other vehicle or pedestrian traffic.
2. State load carried and check for accuracy of order.
3. Ask where product is wanted.
4. Drive vehicle to proper tank or tanks.

At this point the chauffeur's next step, product delivery, is part of delivery time which will be discussed under the next heading.

5. Move vehicle after delivery so that it cannot obstruct traffic.
6. Take delivery slips to customer.
7. Collect cash, make change, sign receipt; or, if charge account, get signature on delivery slip.

This was perhaps the most difficult step on which to establish a suitable time average. The problem was not with the chauffeurs but with customers and their particular conditions. If our chauffeur happened into a service station when there were many automobiles lined up for gasoline, lubrication and other services, contact time inevitably was greater than when the station was empty. Courtesy and consideration are stressed on our chauffeurs as part of our customer relations policy. Although, in the aggregate, it is costly to have our chauffeur wait a long time before he can get to a tank without obstructing the station's business, we would much rather have him wait than have some motorist offended or disgruntled because he may be in a hurry and feel himself blocked.

CONTACT TIME AT DELIVERY
MINUTES

STOPS	CLEAN PRODUCTS	HEAVY FUEL AND INDUSTRIAL LUBES
1	12	10
2	24	20
3	36	30
4	48	40
5	60	50
6	72	60
7	84	70
8	96	80
9	108	90
10	120	100
11	132	110
12	144	120
13	156	130
14	168	140
15	180	150
16	192	160
17	204	170
18	216	180
19	228	190
20	240	200
21	252	210
22	264	220
23	276	230
24	288	240
25	300	250

FIG. 3. Contact time includes making change and friendly but brief chats

DELIVERY TIME
(FLOW ONLY-IN MINUTES)

GALLONS	METERED 1250 2000 2200	METERED 2700 3100 3800	GRAVITY 1000 1500 2200 2700 3300 5100	GRAVITY 1250 2000 2400 3100 3800 5400
1000	22	13	11	
1100	24	15	12	
1200	27	16	13	
1300	29	17	14	
1400	31	19	16	
1500	33	20	17	
1600	36	21	18	
1700	38	23	19	
1800	40	24	20	
1900	42	25	21	
2000	44	27	22	
2100	47	28	23	
2200	49	29	24	
2300	51	31	26	
2400	53	32	27	
2500	56	33	28	
2600	58	35	29	
2700	60	36	30	
2800	62	37	31	
2900	64	39	32	
3000	67	40	33	
3100	69	41	34	
3200	71	43	36	
3300	73	44	37	
3400	76	45	38	
3500	78	46	39	
3600	80	48	40	
3700	82	49	41	
3800	84	50	42	
3900	87	52	43	
4000	89	53	44	
4100	91	54	46	
4200	93	56	47	
4300	96	57	48	
4400	98	58	49	
4500	100	60	50	
4600	102	61		51
4700	104	62		52
4800	107	64		53
4900	109	65		54
5000	111	66		56
5100	113	68		57
5200	116	69		58
5300	118	70		59
5400	120	72		60
5500	122	73		61
5600	124	74		62
5700	127	76		63
5800	129	77		64
5900	131	78		65
6000	133	80		67
6100	135	81		68
6200	138	82		69
6300	140	84		70
6400	142	85		71
6500	144	86		72
6600	147	88		73
6700	149	89		74
6800	151	90		75
6900	153	92		77
7000	156	93		78
7100	158	94		79
7200	160	96		80
7300	162	97		81
7400	164	98		82
7500	167	100		83
7600	169	101		84
7700	171	102		85
7800	173	104		87
7900	176	105		88
8000	178	106		89

FIG. 4. Delivery time for gravity and metered flow in gallons per load

Station owners, also had to be considered. Some are strictly business; others like to talk and joke. Chauffeurs are urged to treat a customer as he wants to be treated. If he wants to comment on the progress of a baseball or football game, we allow a moment or two for courteous listening and reply. A seemingly simple item as making change may create a delay. One station owner or manager may appeal to our chauffeur for "spare silver," which he may lack for making change to his customers. Our chauffeur, too, may run short of change. Bad weather also is a delaying factor.

To simplify this description, no mention is made intentionally of home fuel delivery or industrial or package goods deliveries. The problems, however, essentially were the same.

When all of the factors having to do with customer contact were thoroughly timed and studied, a table of average times was prepared. The results showed that less time was required when making industrial contacts than when contacting gasoline

(TURN TO PAGE 128, PLEASE)

FIG. 5. DRIVER fills out his own operating report which gives sufficient details to judge efficiency. For comparison between this day's run and par performance, see example in text

B253-B 2/48 **MOTOR VEHICLE OPERATING REPORT**

CHAUFFEUR JONES HELPER DATE 11-12 1946

TOTAL SHIFT TIME TRAILER NO. TRUCK NO. 940-409

START 7 AM ☑ GAS ☐ NAPHTHA ☐ MOTOR LUB. ☐ DEL'Y. HOURS 10

FINISH 5:30 PM ☐ F.O. ☐ HVY. FUEL ☐ ASPHALT ☐ BULK HAUL OTHER HOURS

TRIP NO.	TIME OF EACH TRIP START A.M.	START P.M.	FINISH A.M.	FINISH P.M.	DEAD STOPS	ODOMETER READINGS OUT	IN	MILES	CHAUFFEURS - DO NOT USE THIS SPACE TRIPS	CLASS	DEL'Y. HOUR	STOPS	GRADE	GALLONS	AREA	BED HOURS
1	7:45		1:30		2	000	040	40								
2		1:15		5:00	2	040	080	40								
3																
4																
5																
6																
						TOTALS		80								

MEALS PERIOD 12:00 - 12:30 LOCATION LLANARCH

PERIOD LOCATION

TRUCK SERVICED GAS OIL ALC. WATER

DETENTIONS (SHOW CLOCK TIMES)

None

RADIATOR TESTED TO ✓ DEG.

SPECIAL CHARGE ✓ HRS.

ANY ACCIDENTS? NO SPILLS? NO

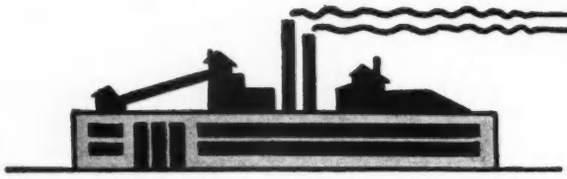
TRAVEL OUTSIDE OF PENNA? NO

TRUCK CONDITION: START OK FINISH OK

DID YOU ISSUE REPAIR ORDER? NO

TANK CHAUF.: ENTER - NAME AND ADDRESS OF ROAD OIL, HVY. FUEL, BULK DELIVERIES AND PUMP OUTS ON REVERSE SIDE. IDENTIFY BY TRIP NUMBER.

FACTORY SERVICE NEWS Briefed for



International Harvester

Governor Kit

A KIT containing a distributor-controlled Mallory engine speed governor of sandwich type which can be installed between the carburetor and the intake manifold is now available for field installations on BLD-250 and BLD-269 downdraft engines equipped with either a Zenith, Holley or Carter carburetor. Installation kit IH No. 69 339 R91 contains all necessary parts and instructions.

Carburetor Repair Kits

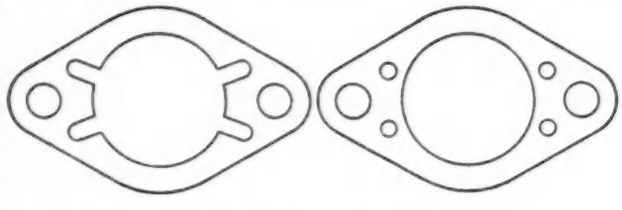
ZENITH carburetor repair kits containing most of the parts generally found necessary in the repair are now available for many of the Zenith carburetors used on the D and K line IHC trucks.

Throttle Control

THE throttle control mechanism of the Holley Model AA1G carburetor as used on the RED engines has been improved in design in order to overcome loosening of the throttle lever on its shaft, lost motion between the linkage and throttle plates, and binding of the accelerator control mechanism installed on the carburetor. Changeover kit IH No. 68 670 R91 is available for this modification.

Carburetor Gasket Installation

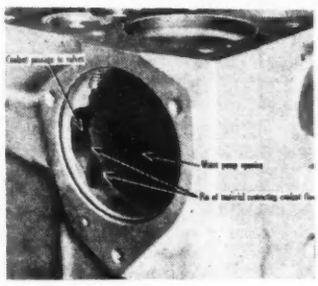
REPORTS of Carter carburetor malfunction have been found to be due to use of the wrong carburetor flange gaskets. Some of this is traceable to the drive-away concern's operator forgetting to install the correct gasket when the governor used by the drive-away company was removed



USE WITHOUT GOVERNOR USE WITH GOVERNOR

upon arrival at destination. There are two different types of gaskets for use according to whether the vehicle is equipped with a governor. The gasket for use between the carburetor and governor has four small holes while the gasket for use without a governor has four slots.

Overheating Troubles



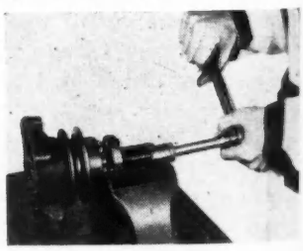
REPORTS of premature valve failures in GRD engines whereas the valves appeared to be overheated has resulted in the discovery of an obstruction in the cooling system which was causing insufficient cooling. A fin or web of cylinder block material is sometimes found in the water pump opening at the valve side of the cylinder block. This web, if found, should be chiseled out to the contour of the cylinder wall.

Oil-Filled Coil

AN oil-filled coil has replaced the present compound or wax-filled ignition coil used on the GRD engines. This new unit provides positive protection against moisture and will prevent shorting of the internal windings. The new coil is interchangeable with the old provided the new rubber nipple IH 66 351 R1 is used.

Chevrolet

Water Pump Leakage



TO eliminate complaints that have been received from the field concerning water pump leakage, a pump repair kit No. 369032 has been released which may be used to service pump assemblies 839467, 838903 and 598308 from 1937-1949 inclusive. To facilitate repair, tool J-1226 has been developed for use in removing the water pump pulley.

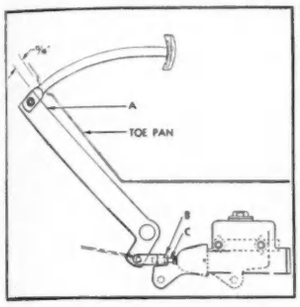
Improved Horsepower

TO obtain an increase in peak horsepower of both 216 and 235 engines, without a sacrifice in maximum torque or detrimental effect on low speed operation, a change has been made in the keyway in the crankshaft gear. This retards the camshaft 4 deg relative to the crankshaft. This change went into effect with serial No. 572254 on 1947 engines and is

Fleets from MANUFACTURERS' BULLETINS

used on all 1948 engines. When the new gear is installed, the valve timing will be affected. A new valve timing diagram is now available to apply to the new engines.

Brake Pedal Adjustment



THE location for measuring toe board clearance has been changed on 1947 models to facilitate adjustment. This clearance should now be measured between the top of the brake pedal arm and the underside of the brake pedal toe pan depression. Due to the difference in angularity between the brake pedal arm and the toe pan, the distance is increased to 13/16 in. This location provides an easier and better means of adjustment as compared to the old way of measuring ¼ in. between the top of the brake pedal arm and the intersection of the floor and toe pan. Adjustment remains the same.

Replacement Blocks

THE 1948 cylinder block assembly for both 216 and 235 engines is available as a replacement for all models 1942 to 1947. A few changes, however, are necessary for field installation.

A new oil pump screen cover support and pipe assembly, part No. 3835365, must be used to prevent interference between the oil suction pipe and the main bearing cap bolt heads as used on the 1948 engines.

All 216 oil pans must be reworked to provide clearance between the oil suction pipe and the upper edge of the oil pan tray at a point opposite No. 4 connecting rod. This clearance may be obtained by peening the tray and also the pan if necessary to provide 1/32 in. clearance at this point.

Diamond T

Crankshafts and Bearings

THE Diamond T crankshafts furnished to Hercules for installation in Diamond T special engines are counterbalanced with Tocco surface hardened journals. They are supported on seven main bearings and are drilled for full pressure lubrication. Main and rod journals should be checked for out of round and reground if the wear exceeds .001 in. Runout should not exceed .002 at the center main bearing journal.

FACTORY FLASHES

Factory service bulletins, not always available to every fleet, contain valuable maintenance information which will speed service and improve operating efficiency.

Here are pertinent excerpts from bulletins presenting manufacturers' recommendations for unit assembly, tear down, trouble shooting and overhaul. In addition, new parts, unit modifications and design changes are outlined in brief.

The fleetman will want to keep abreast of these changes and service tips, so these factory flashes will be published as they are obtained.

If the journals are to be reground, grind to the nearest undersize. Standard undersizes are .010, .020, .030 and .060 in. for babbitt bearings; and .020, .030, .040 and .060 in. for aircraft metal bearings.

Compensation for main bearing wear can be made by installing undersize bearings, since they are the non-adjustable type. It is important to note that three .003 in. shims are used under each side of each main bearing cap on current models to give proper crush and concentricity. However, these shims should not be removed in an attempt to adjust the bearings. They should be replaced in the same quantity and position as before removal.

Connecting rod bearings are non-adjustable and must be replaced when excessive wear occurs.

It is important to note the difference between the upper and lower half of the inserts in aircraft bearings. The upper halves are drilled for oil holes. The lower halves are longer than the upper halves. They are not interchangeable, and filing, drilling or other methods used to interchange them will result in early failure. When main bearings are replaced, it is advisable to replace the crankshaft and thrust bearings on those engines equipped with separate thrust flanges.

Piston Clearances

PISTONS used in Hercules engines are aluminum alloy cam and taper ground. They are removed from the top. Correct piston clearances are as follows:

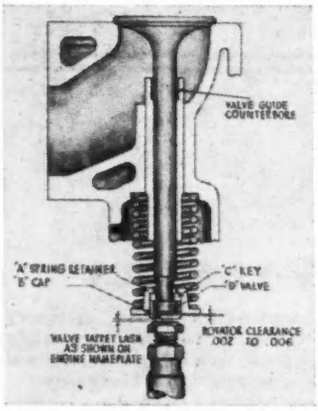
QX engines	.0025-.003
JZA, JXE-3, JXB engines	.0025-.003
JXC engines	.003 -.0035
JXD engines	.004 -.0045
JXLD engines	.0045-.005
WXC-3 and WXLC-3 engines	.0035-.004
WXLD engines	.004 -.0045

(TURN TO NEXT PAGE, PLEASE)

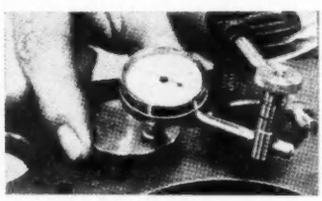
Factory Service News

DIAMOND T—continued

Rotating Valve

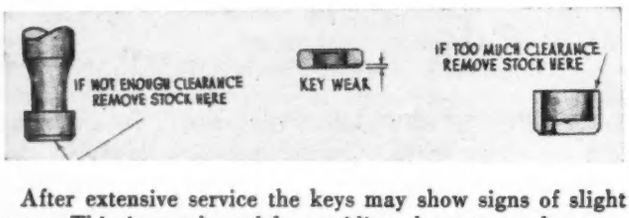


A ROTATING type exhaust valve is used on the JXLD and WXLD engines. This is so designed that the valve is free to rotate with the natural twist imparted by spring action, the swirling action of escaping gases and the operating vibrations. The rotating parts are interchangeable when new. However, it is wise to check the rotator clearance after assembly to insure rotation. Be sure valve and rotator parts are clean. Precaution should be taken against nicking the valve tip or rotator parts when assembling as this might cause lack of clearance. Be sure to keep rotator parts with their respective valves when servicing as this will save work in trying to refit the parts.



If no clearance exists after assembly, remove all parts and give clearance by removing stock from the end of the valve stem. If clearance is too great, remove enough stock from face of cap to reduce it to proper limits. To remove stock, either grind or lap on a fine emery cloth or oil stone.

The rotor clearance when the parts are assembled in the engine should not exceed .006 in. or be less than .002 in. To check the clearance turn the engine to raise valve from seat. The valve should turn freely and clearance can be checked by indicator reading on valve head when valve is moved vertically.



After extensive service the keys may show signs of slight wear. This is not harmful, providing the rotator clearance is still within the recommended limits. Be sure when reinstalling the keys to get both parts of a set in position with the wear facing the same direction so that the spring washer will not become cocked. As a final check rotate the engine until each valve is lifted from the seat, in which position it should turn freely.

Autocar

Governor Tips

THE Holley Centri-Vac governor is used by Autocar with both Holley and Zenith carburetor installations. When used with the Holley carburetor, the rotor unit is driven from the distributor shaft and is connected by tubing with the diaphragm unit which is attached to the carburetor body. The diaphragm is attached by a short rod to the lever on the throttle shaft of the carburetor.

When the Holley governor is used with the Zenith carburetor, the installation includes a separate throttle box mounted between the carburetor and the inlet manifold.

Should the governor fail to function, it may be due to a shearing of the pin in the distributor drive gear. In checking for this remove the governor assembly from the distributor housing and check each unit separately. The distributor shaft and the governor shaft should turn freely without binding at any point.

There is a small pin projecting into the bore of the rotor housing which prevents the spring anchor from turning when the governor is being adjusted by means of the screw. If the threads of the adjusting screw bind in the spring anchor, this small locating pin may be sheared off, causing the spring to twist. This will cause erratic governor action.

Where difficulty is experienced in securing proper governor adjustment, the vacuum air bleed screw should be removed from the throttle box and cleaned. This screw is provided with a fixed orifice which must be kept free from carbon deposit to allow free passage of air.

Recommended service on the installation suggests removing the oil plug in the governor housing cover and saturating the felt with light engine oil every 5000 miles or monthly.

FWD

Water Pump Leakage

SOME of the older models of FWD trucks have had leaking water pumps. An investigation by the company reveals that in an attempt to correct a leaky pump some operators have turned the pump packing nuts so tightly that the packing is compressed against the shaft hard enough to score the water pump shaft.

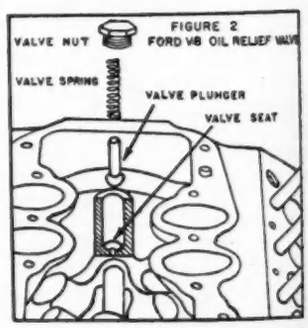
As a result water pump packings are now replaced with spring loaded packings.

A certain amount of grease should reach the water pump packing, thereby producing a more efficient seal. In order to obtain a positive delivery of the grease to the packings in water pumps on the 6B, 6M, 6SR and 6WA series Waukesha engines, a groove ⅛ in. wide and 1/32 in. deep has been added to the water pump bushings. This groove leads from the drilled grease hole to the edge of the housing.

McQuay-Norris

Ford Lubrication

SCUFFING and scoring occurring in Ford V-8 engines may be due to a faulty oil pressure relief valve which allows oil pressure to be maintained way below normal. Sometimes the replacement of a weak spring and a pitted plunger does not entirely correct the trouble because the seat in the block is also pitted. The seat cannot be replaced since it is an integral part of the block, but it can be reconditioned.



If a special tool is not available, a good seal can be obtained by centering the new plunger on the seat. Then with a blunt punch held against the end of the plunger a sharp blow is struck with a light hammer. This will pound the plunger face into a good seat to hold the oil pressure.

The OVERLOAD

The Liabilities of Signalling by Truck Drivers . . . A Complete Fleet Safety Program

by GEORGE T. HOOK
Editor

WHAT is the liability of a truck driver who signals a motorist that the road ahead is clear and safe for him to pass and then something totally unexpected happens which involves the motorist in an accident? What is the liability of the truck driver's employer if he has instructed the driver to practice such signalling?

★ ★ ★

If a case involving circumstances such as cited were to be placed in the hands of a jury, what are the chances that the truck owner would be freed of responsibility? And even if liability were never proved wouldn't an owner-sanctioned signalling system encourage a rash of suits that would be costly to truck owners even in the winning?

★ ★ ★

Fleet operators should ask themselves these questions and get competent legal advice before adopting any company-wide signalling plans. Such plans have been advocated to the industry from time to time and their purpose is entirely laudable. They are intended to promote highway safety and at the same time improve relations with the motoring public. All this is so worthwhile that it is a pity the truck owner must approach any signalling plan with fear and trembling.

★ ★ ★

It is, of course, true that many truck drivers make it a practice to signal motorists on the open road. To many night-time travelers the tipping of a truck's headlight beam is as familiar and as courteous as the tipping of a gentleman's hat to a lady. But it is one thing for the truck driver to signal on his own responsibility and quite another for him to be following instructions of his employer. Issues, then, become so complicated that they provide our lawyer friends with a field day.

★ ★ ★

Looking at the matter coldly, any truck driver who signals a motorist that the road ahead is such that it is safe for him to pass is assuming a very grave responsibility. The road ahead may be clear one moment, but how can the driver tell that the very moment after he has signalled a motorist to pass, a cow, a car, a picnicker or a farm wagon may not dart out from the side of the road and set up conditions for an accident? All this can happen in broad daylight. How many more accident-provoking incidents can occur at night? Headlight beams can penetrate only so far, and even a driver with excellent eyesight can't see very much in the dark.

★ ★ ★

There are many courtesies that truck drivers can and should extend to motorists but the assumption of safe-passing judgment is not one of them. Let the motorist decide for himself when it is safe for him to pass. Then let him signal with his horn and let him pass with every show of courtesy. Thereafter, if there has been an error of judgment or the always-possible unexpected looms ahead, the motorist cannot shift responsibility to the driver or to his employer.

★ ★ ★

And the woods today are full of responsibility-shifters. If a nation-wide signalling program were adopted by fleet operators, there would be an epidemic of litigation. Motorists would be seeing signals when none was given, and would swear on oath to seeing passing signals when they were warned to stay in line. Good samaritans all over the country would take a beating in court. And what would happen to public relatons?

★ ★ ★

Considering the many risks involved fleet operators should steer clear of signalling systems that substitute truck-driver judgment for that of the motorist.

TOO many fleets practice safety on a catch-as-catch-can basis. In such fleets the safety job is tossed into the lap of a man who has a lap broad enough to take on this additional responsibility, or to a man whose job seems to make him a logical choice. In most cases no opportunity is given such men to school themselves in safety techniques. The smattering of safety knowlege they acquire by the simple process of self-exposure helps them nudge the safe-driving record up a notch or two but is seldom enough to enable them to sell themselves to their bosses as the men who should head up an all-around, systematized safety program.

★ ★ ★

For such men and such fleets Commercial Car Journal has something helpful. This month it begins publication of a complete safety program. This program is adaptable to any size fleet and to any fleet vocation. It will tell "Why" certain things need to be done to promote safe truck operation and "How" to do them. In one sense it is a safety primer, and in another sense it is an advanced course in highway safety.

★ ★ ★

This complete program, prepared by safety experts of the National Council of Private Motor Truck Owners, Inc., will be published in the form of a series of Safety Instructions. Each issue will contain one or more of these instructions until the entire program is set before fleets. The published program will be complete even to the inclusion of all necessary forms.

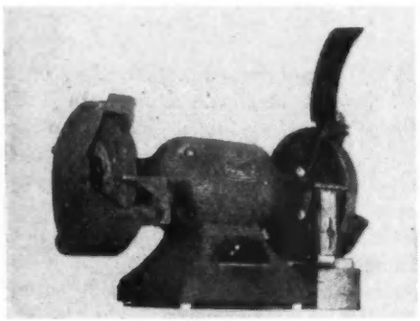
★ ★ ★

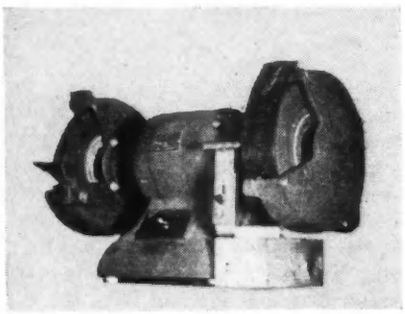
Fleet owners should put this program to use and take safety promotion out of the class of a part-time sideline.

SHOP HINTS FROM FLEET SHOPS

$25

For the Best Hint Published Each Month





$25 HINT OF THE MONTH

Grinding Wheel Guard

by Clinton B. Baker
State Roads Commission
Easton, Md.

Here is a grinding wheel guard we find very effective in helping mechanics keep their tools sharp and efficient. We find it necessary to reserve one stone for precision sharpening of tools.

To achieve this I made a piece of flat steel to fit the open space at the wheel guard and fitted a drawer lock into the lower end.

As only personnel who have use for this wheel have access to the key, we have had no further trouble with other employees damaging the wheel by using it for other types of work.

While we use the drawer lock, other mechanics may find a regular hasp and padlock will be easier to fashion and just as effective in saving the wheel for precision grinding.

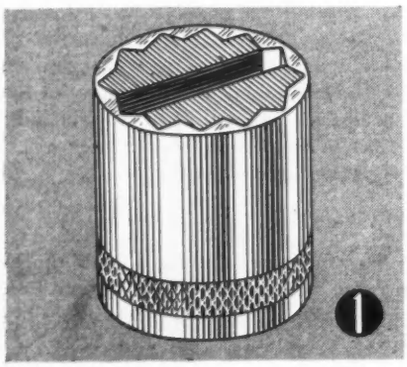
1. Valve Cover Wrench

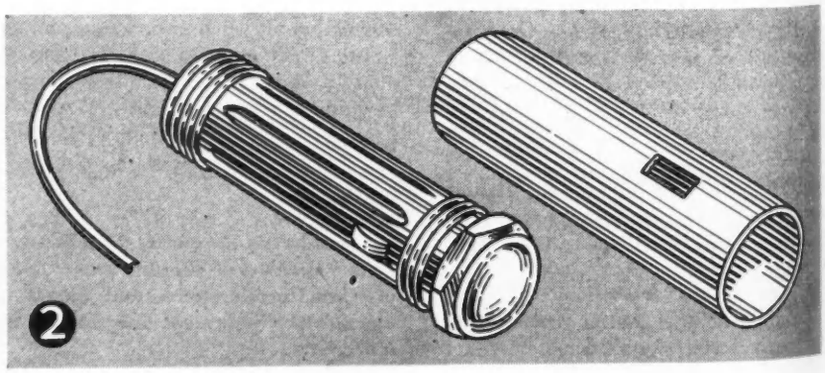
by Erwin Haslett
Hillsdale, Mich.

Replacing bolts in valve cover plates in L-head engines is sometimes a difficult task. With this special wrench the job can be accomplished without burning the fingers.

Take an ordinary ¾-in. socket and size a ¾-in. rod to fit inside it. Slot the rod ⅛ in. wide and about 1 in. deep and weld it into the socket.

This will fit over the wing nuts and can be used with a speed wrench to do a better job than you can do with pliers or fingers.





$5 *For All Hints Published Each Month*

WE'RE WAITING—ARE YOU WRITING?

Our "selective service" picked the grinding wheel guard for the $25 award. Possibly you don't agree with our decision. Maybe you can do better.

We know there are scores of meritworthy shop hints floating around every fleet. And there are surely scores of CCJ readers who can use an extra $5 or $25. Let's get together so your friends and neighbors can profit from your time or labor-saving "brainstorm".

2. Timing Light Tip

by A. R. Kleinke
International Harvester Co.
Riverdale, Iowa

To keep the bakelite case on your timing light from being broken, slip a piece of radiator hose over it. This will absorb the shock when it is ticked by the fan or dropped.

3. Wire Stripper

by Marion L. Rhodes
Knightstown, Ind.

A handy wire stripper can be made from a jackknife as shown in the accompanying sketch. Grind a notch in a knife blade about 1 in. from the end and about 1/8 in. deep.

In this way the knife can be used for cutting back the insulation and will always be on hand to strip the wire for a quick installation.

4. Ford Valve Grinding

by R. M. Shelton
Safety Convoy Co.
Dallas, Texas

The new style Ford valve stems are larger, and the guides are one-piece so that a new style false guide is required when grinding or spacing them.

One of the old guides can be used as a false guide and a rubber band can be used below the guide so the whole assembly will stay together when doing the service.

5. Lube Drum Handles

by George Favinger
State Roads Commission
Easton, Md.

We use several types of lubricants in our shop, and all have the patented type containers which seal them after the lid is once opened, but which cause us a lot of trouble when the ears become bent or stick out in the way of the mechanic.

We simply remove the ears or flaps around the lid and bolt a small drawer pull to the center. Now a man can lift the lid without having to pry it off and without getting his hands greasy.

6. Specification Chart

by Henry C. Williams
Inland Motor Freight
Spokane, Wash.

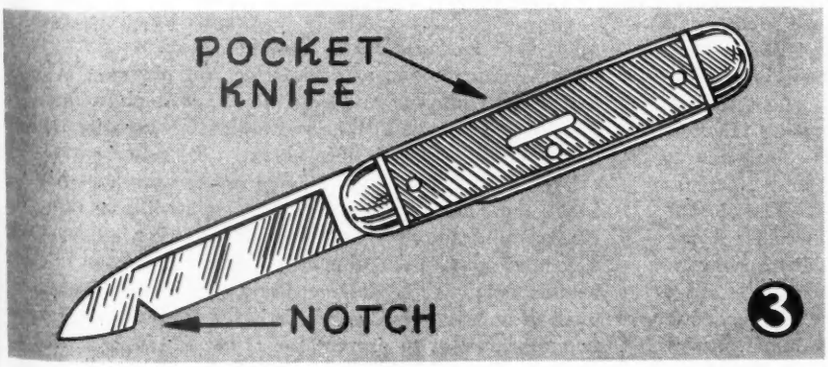
Here is a tip that will save the mechanic and parts man a lot of time in the shop or in case of a road failure, when specifications for the vehicle are not readily available.

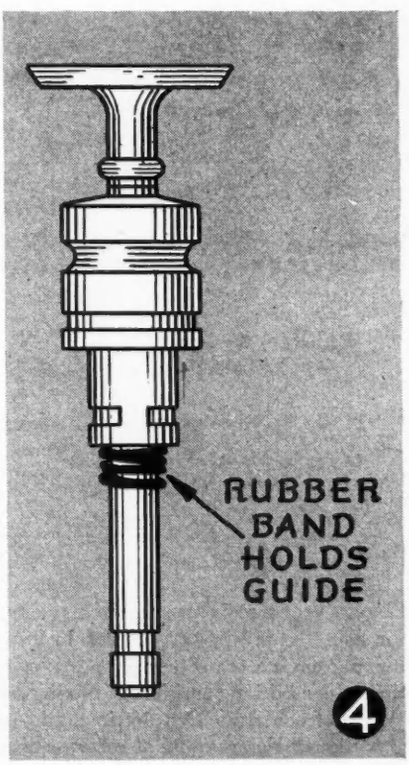
We make up metal sheets of scrap aluminum and stamp chassis specifications on them with steel stencils. The plates are then fastened inside the door panels for trucks and on the left front frame member for trailers.

This plate contains the following information:

Truck No. ..... Make ..... Model	
Axle No. ..... Axle Make	Hub No. ..... Drum No. .....
Inner Bearing ..... Outer Bearing	Brake Shoe No. ..... Lining No. .....
Inner Cup No. ..... Outer Cup No.	Right Stud No. ..... Left Stud No. .....
Axle Shaft No. ..... Seal No.	Flange Stud ..... Flange Gasket .....

This is especially helpful to fleets who have modified their trucks or trailers and substituted different parts and assemblies.





The Conference Corner

Change at Least Once a Year

by V. M. Mantz

Director of Research
R. M. Hollingshead Corp.

"We believe that brake fluid should be changed about once a year and, of course, should be changed when new brake linings are installed or when any extensive repair work is done on the brake system, regardless of the length of time. We have many truck accounts who change brake fluid about every 6 months and some who change about every 18 months.

"The chief offender in contaminated brake fluid is the water which develops in the brake system due to condensation. If this water builds up past the point which can be tolerated by the brake fluid, then there is a possibility of electrolytic action, resulting in pitted metal surfaces and rust and corrosion would reduce the efficiency of the brake system and contaminate the fluid with metallic particles. The abrasive action of the particles would further aggravate the bad conditions in the brake system.

"In reference to this same inquiry the Government has unloaded a considerable quantity of petroleum or mineral base hydraulic fluids on the market and because of their relatively lower cost they have been rather promiscuously bought and used either straight or in addition to approved automotive fluids with the result that there is an excess rubber swelling effect and final disintegration of the rubber parts in the brake system."

It Should Be—But Isn't Common Practice

by R. K. Super

Brake Div. Engineer
Timken Axle Brake Div.

"Your question regarding changing hydraulic brake fluid periodically should be answered in the affirmative. It is known that this practice is not usual and a change is made only when there is evidence of fluid pollution. There is no economy in using old fluid, and it has never been our practice to recommend its re-use."

Change Every Six Months

by W. R. Freeman

Chief Engineer
Wagner Electric Corp.

"It is recommended that the brake fluid in a hydraulic brake system should be changed periodically. The time period will vary depending upon the conditions under which the vehicle is operating. In general it seems desirable to change the fluid in trucks twice a year and in passenger cars once a year. The reasons for doing so are in part similar to those advanced for draining the engine crankcase—condensation and dirt accumulation. In addition, accidental mixing of inferior fluids are a source of contamination detrimental to satisfactory operating conditions. For reasons of safety, our fluid container carries the following recommendation: "Best results will be obtained by changing fluid every six months."

"The penalties of using fluid contaminated by mineral oil or grease or lubricating oil are deterioration and swelling of the rubber sealing cups and rubber hose in the brake system which can cause quick failure of the system. Dirt and water in the system both tend to cause corrosion and possible resultant failure of the system. Dirt can also cause excessive wear on the moving parts of the system."

All Fluids Thicken. Change as Required

by Chester M. White

Vice Pres.
Charge of Research
The Puritan Co.

"We do recommend changing hydraulic brake fluid when it is necessary. This change cannot be recommended at a specific time interval since the fluid condition will vary considerably with type of vehicle, mileage traveled, number of stops or applications of the brake, weather and dust conditions, as well as time fluid has been in use. Some vehicles, under severe service, may need fluid changed fairly often, while the little used vehicles may be able to operate satisfactorily without fluid change for long periods. Even under best operating conditions, all fluids will in time thicken due to loss of solvents by evaporation. This thicker fluid will give sluggish brake action and should be replaced if bad, or thinned out by adding new fluid.

"We feel that the best procedure is to inspect the fluid occasionally, depending on conditions, by viewing it in the master cylinder or using sample bled from wheel cylinder. If the fluid is dirty, thick, gummy or diluted with moisture, it should then be changed.

"Well made brake fluids will absorb the moisture of condensation, preventing it from doing damage to the system. These fluids are properly inhibited to neutralize the corrosive action of water on metal parts. However, many fluids will not absorb water, leaving it to form a separate layer at the bottom of master cylinder and wheel cylinder. Rusting of iron results with a rough surface formed against which rubber cups and pistons chafe. This will give sluggish action on all brakes or on those having corroded wheel cylinders. Where this rusting occurs, honing or replacement of the cylinders and worn parts will be necessary."

Normally Fluids Do Not Require Changing

by I. B. Chandler

Minnesota Automotive, Inc.

"It is our opinion that brake fluids meeting SAE specifications for heavy-duty fluid do not, under normal conditions, require periodic changing. It has been our experience that such heavy-duty fluids will stand up for a greater length of time than the other working parts in the braking system.

"It is our opinion, as a manufacturer of brake cylinders, associated brake controls, etc., that the usage of mineral base fluids or oils is one of the largest single causes for mechanical breakdown of hydraulic brakes.

"We cannot be emphatic enough in recommending that brake fluid cans or containers be isolated from other oils, etc., usually found in garages and shops. We believe it to be a good suggestion that the shop foreman or person in charge of the repair shop destroy brake fluid cans immediately upon their being emptied. This is the simplest recommendation we know of to prevent the re-use of empty brake fluid

Question:

SHOULD Fleets CHANGE BRAKE FLUID Periodically?

MANUFACTURERS SAY "YES"

A periodic change of brake fluid at least once a year is recommended by many factory men—although they imply that this practice is not always followed. A periodic drain, flush and refill is good insurance against brake failures, they say, because fluid becomes contaminated with water from sweating, dirt from filling, and foreign elements from a variety of causes. Contaminated fluid causes rust, freeze-ups, failures and early wear of parts.

cans for oil and such other fluids. We are certain that such carelessness has often caused mechanics to unwittingly use oils or some foreign fluids as brake fluid."

In Practice Changing Is Rarely Done

by R. L. Atkin

Kelsey-Hayes Wheel Co.

"With respect to periodic changing of fluid in hydraulic braking systems, it is believed that such a practice would offer certain benefits. To our knowledge, however, this is very rarely done. A typical brake fluid composition consists of approximately 65 per cent alcohol and 35 per cent castor oil by volume. Since the alcohol (a few common types of which are Diacetone, Isopropyl, and Isobutyl) is subject to evaporation, the viscosity of the fluid increases as the relative percentage of alcohol decreases. Thus a tendency toward sluggish winter operation might be alleviated by changing brake fluid each fall. This procedure would also improve the life expectancy of rubber cup seals in wheel and master cylinders due to periodic elimination of gritty impurities which accumulate in the hydraulic system.

"In bleeding brakes it is highly desirable to add either new fluid or fluid which has been filtered thoroughly prior to reuse. In filtering fluid, it has been found that although filter screens allow more rapid flow, a more satisfactory cleaning is provided by a tight-woven filter cloth or similar non-metallic filter. It is also desirable to see that fluid to be reused is of either proper viscosity or specific gravity as a check on the existing percentage by volume of alcohol and castor oil for the reason indicated above."

Flush and Refill When Unit is Serviced

by F. J. Markey

Engineering Dept.
Moraine Products Div.
General Motors Corp.

"No commercial practice of reclaiming brake fluid has ever come to our attention. Since the safety and endurance of the brakes greatly depend upon the fluid, most hydraulic brake engineers strongly recommend, from the standpoint of safety and economy, the flushing out of the old fluid and replacing with new fluid when the hydraulic systems are repaired. The average hydraulic brake system holds about one pint of fluid.

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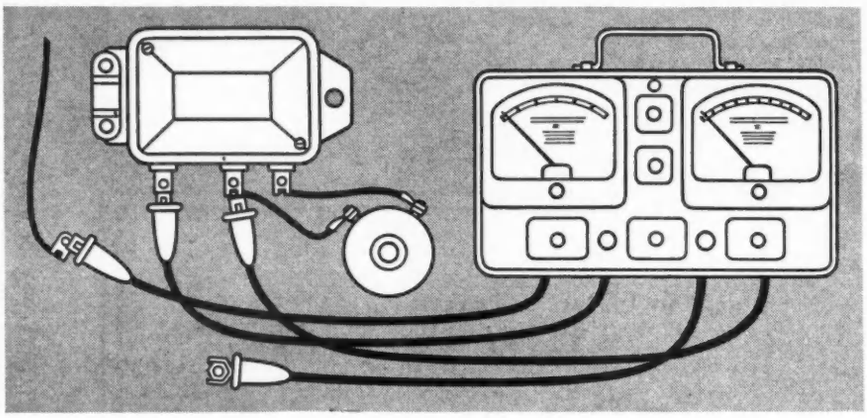
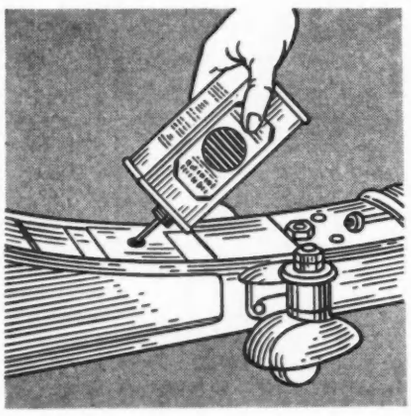
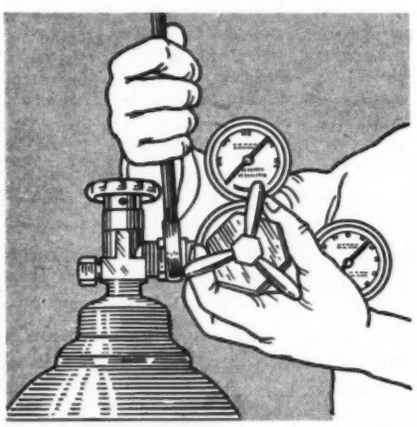


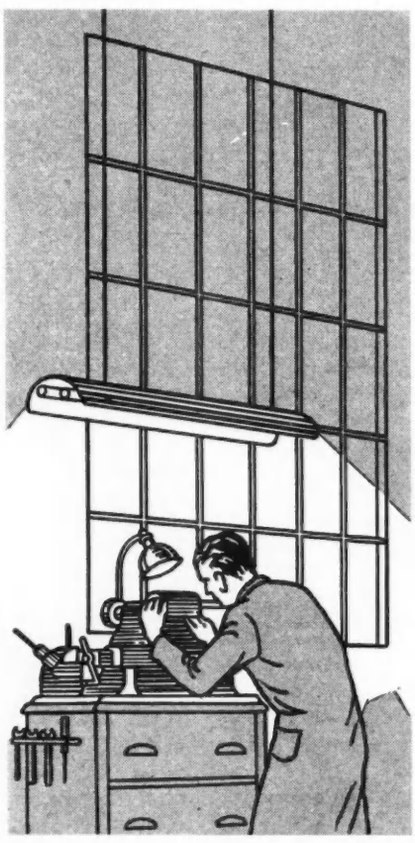
For accurate readings leads on volt-ammeters should be clean, free of corrosion and clamped tight. When they are replaced, they should be of same size and length as original equipment



Fluid should be checked frequently in hydraulic jacks. Only recommended oil should be used

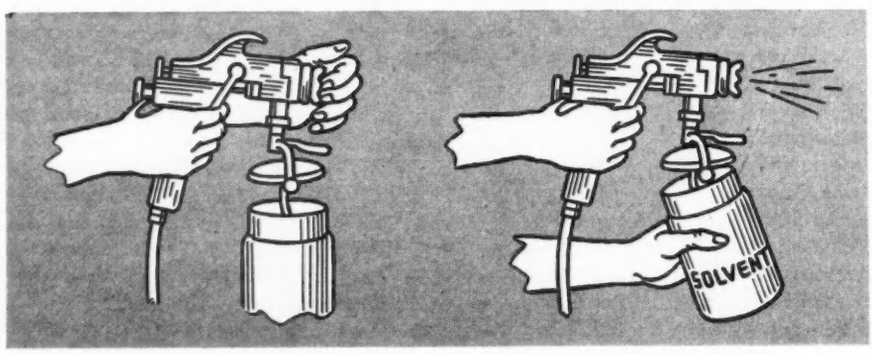


Connections on acetylene welders should be kept tight and tested for leakage frequently



Valve refacers should be located in well-lighted areas. Lubrication, stone dressing and frequent cleaning should be practiced

Hold finger over nozzle to blow back material in paint guns and spray solvent to clean



Valve Refacers

A VALVE refacer is a precision machine and must receive periodic attention if one expects precision work. One of the first essentials to good service is cleanliness. If dirt or dust is allowed to accumulate on the machine, it will eventually penetrate into the bearings, slides, feed screws or armatures, to expedite wear and shorten life.

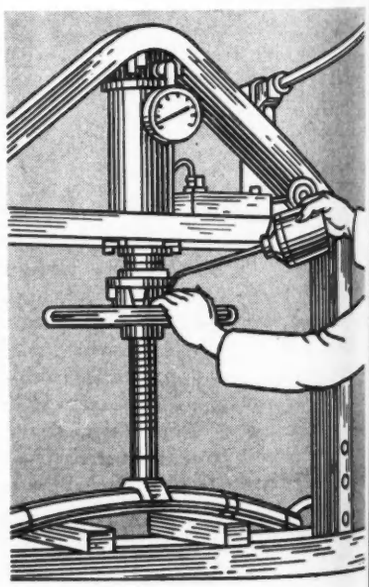
It is recommended that the valve refacer be washed at the end of the day's operation. Abrasive materials should be wiped off the exterior surfaces, and an air nozzle should be used to blow out foreign material from inaccessible spots.

It is the responsibility of the shopman to catch potential failures before wear in any one part affects the efficiency of the machine. Motor brushes, belts, pulleys, collets and similar parts should be checked frequently for signs of wear.

Grinding wheels should be kept dressed properly. The wheel should not be allowed to wear too small before replacement because as the peripheral speed or effective grinding speed is reduced, cutting efficiency and accuracy suffer.

The operator should be sure he has the proper type of grinding stone to suit the type of metal he is facing. Stones should be dressed on the stone

Clean, lubricate and check hydraulic fluid in hydraulic presses occasionally to up life span



Factory Recommendations for

Servicing Shop Equipment

Including engine testing instruments, valve refacers, hydraulic jacks and presses, welding equipment, paint spray equipment, lathes, and lubricators

dressing stand to establish a true angle to the pilot. Redressing during the grinding procedure is also necessary if the stone becomes loaded or grooved.

Most valve refacers are equipped with Universal type motors and will operate on either ac or dc. However, they should be operated at voltages within 10 per cent of the recommendations on the name plate specifications. If an extension cable is used with the machine, it should be large enough to carry the current without an appreciable drop in voltage. A voltage drop at the machine will cause loss of power and damage to the motor through overheating. A three-conductor cable is used with most machines. The third wire is grounded either through the outlet or it is secured to a water pipe or suitable ground to protect the operator from shock in case of a short circuit.

Machines with grease-sealed ball bearings have sufficient lubrication to last the life of the units. The gear case should be cleaned every 60 days, however, under normal usage. After flushing and cleaning it should be refilled to the proper level—usually half full. A few drops of light engine oil should be applied to all oil cups every 30 days or so.

Accuracy is built into this equipment, but much of its precision will be offset if the machine is not mounted and located properly. The machine should be fastened securely to a workbench if it is not pedestal-mounted. Adequate lighting must be maintained. While some have built-

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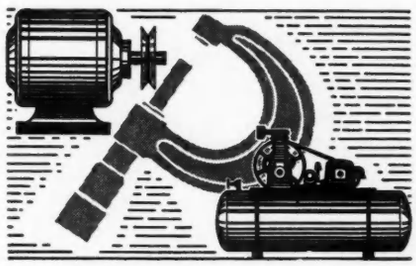


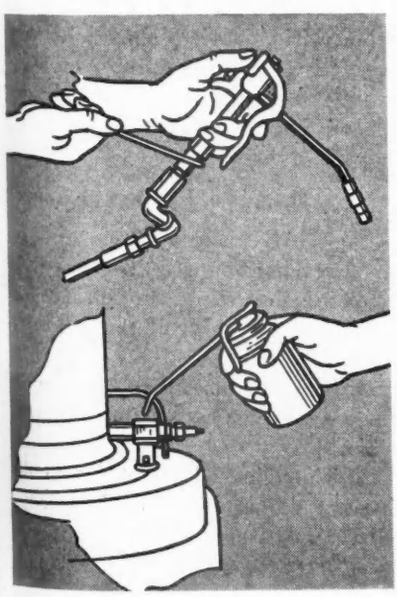
Precision Tools for the Modern Shop

The sixth of a series of articles on power tools and shop equipment, designed to help the operator select and maintain such units, improve efficiency and work output.

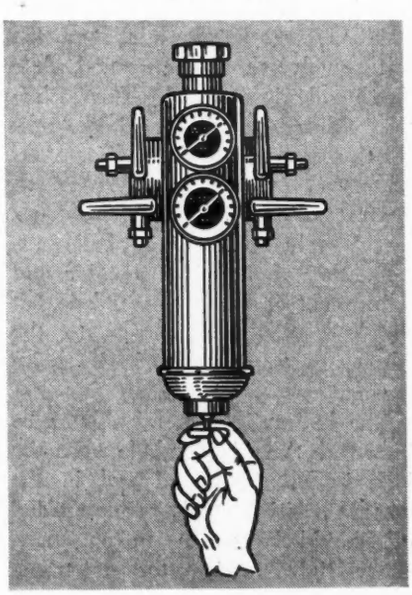
Previous articles covered: 1. Selecting Electric Tools; 2. Selecting Pneumatic Power Tools; 3. Servicing Power Tools; 4. Selecting Hydraulic Shop Equipment; 5. Care and Use of Hand Tools.

To follow: 7. Precision Measuring Instruments and 8. Selecting and Servicing Air Compressors.

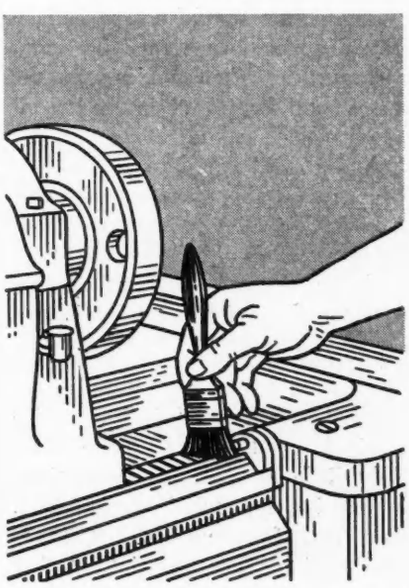
Adjust control valve in lubricator for measured shot delivery. Oil pumps daily in normal usage



Drain transformer on spray equipment and replace filter pack when it becomes saturated



A paint brush is best method of cleaning lathes and machines to keep parts free of dirt and chips



Servicing Shop Equipment

(CONTINUED FROM PAGE 47)

in spot lights, a drop light or a fluorescent fixture is also recommended so that the operator can read gages and set the machine accurately. Adequate lighting should be free from glare as well.

Engine Analyzers

WHEN six-volt batteries are used in conjunction with engine testing equipment, they should have a specific gravity reading of not less than 1250. Lower charge might give inaccurate dial readings.

In using the combustion tester the operator should empty the hose of any water which has accumulated. The hose should be emptied after every test, and if the test requires longer than five minutes, it will be necessary to remove the water during the test.

Test leads should be cleaned with carbon-tetrachloride rather than gasoline. Corrosion or dirt give rise to incorrect readings. Leads should be removed by releasing the clamp, as jerking them will damage both wire and terminals. They should be hung on their respective holders when not in use. If and when insulation becomes frayed or damaged, wires should be replaced, being careful that the same length lead is installed. All connections should be kept tight for accurate readings.

The cabinet should not be banged around or used as a rack for other instruments. When not in use, the unit should be stored in an out-of-the-way place, where other tools or equipment will not damage it.

Since most shops are not equipped to service these instruments, any malfunctioning should be reported to the factory branch or the unit should be sent to a specialist for repairs.

Jacks and Rams

HYDRAULIC hand jacks, service jacks and rams require relatively little service, but inspections should be scheduled periodically. Most manufacturers do not insist upon periodic change of fluid, but if the fluid becomes contaminated through leakage, entrance of dirt or the sweating of the reservoir, it should be drained, flushed and refilled.

Jacks and rams are built to an indicated capacity, and overloading will cut serviceability. The unit should be placed directly underneath the load or in such a position that the weight is centered directly over the jack. Loads should not be allowed to drop on the saddle of any hydraulic unit.

Jacks are furnished with handles of necessary length. Adding pipe extensions not only endangers the user, but many times causes jack failure. The saddles should be kept free of grease and dirt. Foreign substances gum up machined saddles and prevent them from grabbing the load safely and surely. Wheel and lifting arms should be cleaned periodically and greased if clogged with dirt.

When hydraulic oil leakage is noticed around the plunger and top cap of a hydraulic jack, a new top cap packing should be installed. In most cases tightening the gland nut will not stop the leakage. Cotter pins should be spread and in place. Loose pins can cause jack part breakage. Rubber oil hoses should be protected from abuse, sharp edges, kinks and grease.

When jacks become airbound, the release valve should be opened while the handle is pumped. Then when the release valve is closed, the unit should be ready for immediate operation.

Most mechanics cannot properly seat valve balls or ream out ball seats. For other than minor repairs and adjustment it is recommended that the hydraulic unit be sent to the factory or to an authorized service station.

The hydraulic jack oil should be level with the oil filler hole when the jack is fully collapsed and in the upright position. Only recommended oil should be used. In an emergency light refrigerator or transformer oil can be used. In cold climates SAE 10-W motor oil is recommended. Hydraulic brake or shock absorber fluid will dissolve sizing which seals the pores in cup leathers, and will corrode valve seats and cylinder walls.

Hydraulic Presses

PERIODIC inspection of hydraulic presses is the first step in increasing the life of any such piece of equipment.

All links and pressure points on the press should be lubricated to reduce wear to a minimum, for loose linkages cut down the efficiency of the press due to loss of stroke and slower operation.

Packing should be checked periodically and adjusted if oil should be seeping out around the ram. Loss of oil and fluid on the ram may tend to promote accidents, due to the press and the parts becoming saturated with oil. When the pressure is applied, they may have a tendency to slip out from under the ram of the press.

At least once a year valves should be cleaned and reseated if necessary. At this time the oil strainer should also be removed and washed, removing any grit or dirt which may have accumulated in the screen.

The primary point to be checked on any press from a safety angle is the table raising and lowering mechanism. Some presses are raised and lowered with chains, others with cable, and should these lifting devices become worn to the point where they may break, an accident could very easily occur. Therefore, table raising devices should be very carefully inspected once every six months and any worn parts be replaced immediately.

Battery Chargers

STANDARD 6 and 12 ampere battery chargers require very little attention, but their life will be prolonged considerably if the following rules are followed:

1. The charger must be kept as far away from battery fumes as possible.

2. The clips which attach to the battery should be cleaned periodically. A corroded clip sets up a re-

(TURN TO PAGE 143, PLEASE)

A Systematized Fleet Safety Program

BY THE BUREAU OF HIGHWAY SAFETY . . . . . NATIONAL COUNCIL OF PRIVATE MOTOR TRUCK OWNERS, INC.

The Why and How

of Management Responsibility

SAFETY INSTRUCTION NUMBER **1**

The Why

THERE are few business investments that match the profits returned on each dollar spent wisely for highway accident control.

Reduction of accidents is GOOD BUSINESS!

Traffic accidents result in needless economic loss—tragic waste of human life.

Reduction of such accidents is a grave responsibility of management.

Reduction of accidents in your fleet needs a sound, practical program—not just for a week or a month, but a program that is as much a part of your continuous year-round business operation as keeping your books.

You don't run your business with slogans, posters, films and other inspirational messages.

Slogans, booklets, posters, films, etc., have their place in a safety program—but THERE MUST BE A PROGRAM.

It is management's responsibility to put into effect an active highway safety program.

A *managed* safety program keeps trucks rolling—decreases maintenance and repair costs—cuts operating expenses. It builds good will!

It is *good business!*

Every Truck Owner's Responsibility Threefold

A motor truck owner's personal responsibility in safety is threefold:

TO THE PUBLIC
TO HIS EMPLOYEES
TO HIS BUSINESS

Management has a distinct responsibility in highway safety TO THE PUBLIC!

Management owes it to society to help reduce suffering and hardship due to accidents—to avoid waste, carelessness and neglect.

Management's further responsibility is to its employees!

This consists of providing vehicles and equipment that are mechanically *safe* and seeing to it that these vehicles are *driven safely.* This is important!

Drivers must be impressed with the fact that you place a high value on THEIR safety as well as YOUR property, and that you want *safe driving first and always.* It can be achieved only through careful SELECTION, INSPECTION AND MAINTENANCE OF EQUIPMENT and the proper SELECTION, TRAINING AND SUPERVISION OF DRIVERS.

Management has a highway safety responsibility to its business!

No. 1 MANAGEMENT RESPONSIBILITY

THE **Why** CONTINUED

A well-planned safety program means more economical and efficient operation.

It means:

1. Selection of equipment
2. Inspection of equipment
3. Maintenance of equipment
4. Selection of drivers
5. Training of drivers
6. Supervision of drivers

Safe transportation contributes greatly to EFFICIENT operation, conserves property, reduces lost man-hours, lowers insurance rates and protects its investment.

Management Leadership Important

Management (large or small) must assume an active role in its own safety program. It should not give passive acquiescence, but *hearty cooperation.* Management must be "sold" on the safety program it is sponsoring. It must give sincere and adequate support, both moral and financial, to the employee who may be delegated authority to supervise its safety activity.

For Any Fleet a Safety Program Is a Must

Any truck owner can develop a practical and effective safe-driving program for his operation regardless of its size or location, or make it a valuable addition to any general industrial safety program that may already be in effect.

For the large fleets, someone representing management and having a special talent in safety, plus executive ability, is usually employed to handle the program. There is ample evidence that such a SAFETY EXECUTIVE is a profitable investment.

With the smaller fleet, however, the owner or manager deals directly with his drivers and maintenance men.

He must OBSERVE the condition of his own vehicles.

He must employ ONLY COMPETENT men.

HE must KNOW the men before they drive.

He must PERSONALLY IMPRESS upon his drivers that recklessness, violation of the law or discourtesy to other drivers or the public will not be tolerated.

The foregoing constitutes the fundamental responsibilities which must be assumed by any truck owner in initiating a successful Highway Safety Program—the "WHY" of such a program.

HOW such a program may be developed and carried out will be found in the accompanying "Instructions"—"The HOW of Management Responsibility."

★ ★ ★

How

OPERATORS who apply a practical program of accident prevention have:

1. Lowered accident frequency.
2. Reduced operating costs.
3. Saved life, limb and property.
4. Built up good will.

You, too, can achieve similar good results from a simple, properly planned and directed SAFETY PROGRAM.

YOUR safety program should not be minimized—it is an important function of management. Your responsibilities in safety affect THE PUBLIC, YOUR EMPLOYEES, YOUR CUSTOMERS, AND YOURSELF.

Here is HOW you do it—in three fundamental steps:

1. By maintaining vehicles in the safest mechanical condition

2. By proper selection, training and supervision of your drivers

3. By creating and stimulating "safety consciousness" within your entire organization.

Right Truck for the Right Job

Vehicles should be of practical design to promote safe operation and be so constructed as to properly carry the loads required of them.

If your own experience has not proven to your complete satisfaction that the vehicles you use are best suited to the job they have to do, seek expert advice—from your dealer and the truck factory behind him—consult your fellow tradesmen with operations similar to yours. Selection of vehicles of proper performance ability and capacity SAVES MONEY and PREVENTS ACCIDENTS.

Safe driving, even for skillful and experienced drivers, is made more difficult when vehicles of incorrect design are provided or when construction is too light for the load to be carried.

Be safe—check the vehicles and their loads and do not overload.

Regular Vehicle Inspection a Must

A regular system of "preventive maintenance" in the hands of a properly trained mechanic, in a fleet shop, dealer, factory branch or independent repair shop, is an important requisite to safety.

To keep vehicles in good mechanical condition, a plan of inspection at regular intervals should be instituted. All drivers should be instructed to report immediately all mechanical defects coming to their attention.

One bad accident due to an unsafe mechanical condition frequently costs more than several years of inspection and preventive maintenance applied to the same truck.

Prompt remedial action must be taken by management on drivers' complaints regarding defects in vehicle operation BETWEEN regular inspection periods. Perhaps the brakes are "soft," the cooling system is overheating. Why wait for the inspection period when *preventive maintenance* is SOUND operational practice?

Vehicles damaged through accident, no matter how slight, should be repaired promptly. Do not gamble with traffic safety; it involves (1) your driver, (2) your truck, (3) the other driver, (4) the other vehicle, and (5) *it will cost you money.*

Follow this plan and many breakdowns will be avoided—and every vehicle utilized safely, efficiently and profitably.

Select Your Drivers with Care

Fleet owners should realize that the best insurance against highway accidents is to select competent, well-trained drivers.

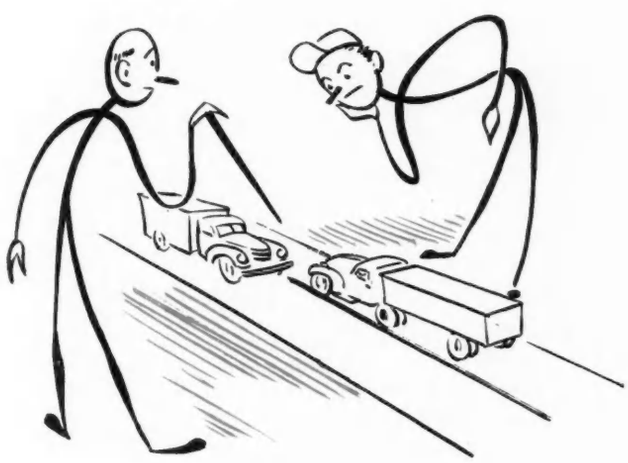
Here again it's management's responsibility. Investigate and test each man to determine his driving ability and his physical and mental fitness for the job.

Select only applicants who are amenable to training and who can be educated in the safe handling and care of your vehicles in traffic and on the highway.

When selecting drivers, special consideration should be given to:

1. Previous safe-driving record
2. Good character
3. Sound judgment
4. Reliability

Applicants should also undergo a thorough medical examination to determine whether they are qualified to drive from the standpoint of physical fitness. Driver qualifications set up by the Interstate Commerce Commission must be met where applicable. These qualifications will be described more fully in subsequent articles in this series.



Training the Driver

Management (large or small) should provide a complete training program for its drivers. Don't THINK Joe knows—BE SURE Joe knows!

Individual training is the most effective.

It is entirely reasonable to expect the results obtained in driver training will reflect only to a reciprocal degree the recognition and encouragement given by management. A timely word of caution may result in retaining a valuable employee; it may avert a serious and costly accident. (More on this subject in "Instruction No. 3-B" to follow.)

THE **How** CONTINUED

The Need for a Safety Supervisor

Again, it is management's responsibility to see to it that drivers are properly supervised under delegated authority or otherwise.

The "safety supervisor" should develop cooperative employee-management relations, encourage willing compliance with company policies and cultivate a desirable attitude—as well as the "KNOW HOW"—on the part of the drivers. He must be delegated all necessary authority consistent with his position. A record of the drivers' accident history and personal characteristics should be maintained to enable the supervisor to study and handle the drivers intelligently. (See also "Instructions Nos. 3-C and 4" to follow.)

In small fleets, these supervisory duties must be carried on as a part-time activity of the owner, manager, or foreman.

In large organizations, a SAFETY COMMITTEE, representing both employees and management, is recommended for reviewing, investigating and proposing corrective measures particularly applicable to the operation. It develops interest and sustains your safety program.

Maintaining Interest in Safety

An effective program calls for a continual "selling" effort on safety on the part of management.

Keep the subject alive within your organization by means of bulletin board notices, posters, safety contests and awards, or other inspirational effort. Periodical meetings with your drivers provide an excellent means for obtaining constructive discussions on safety; but, to be effective, such meetings must be properly planned and interestingly conducted.

Remember Judge Gary's famous statement: "Accident prevention is not only good morals and good ethics—but good business!"

Succeeding installments will furnish you with detailed instructions on:

1. HOW TO select, train and supervise drivers
2. HOW TO install a system of accident reports and records and help you to analyze costs, correct driver weaknesses and reduce accidents
3. HOW TO deal with accident-prone driver
4. HOW TO use visual information, committees, awards, group meetings, organization safety meetings, etc., to make your safety program effective.

Other installments will deal with conservation of equipment, winter holiday and night hazards, fire prevention, courtesy and defensive driving, etc. All of these are important ingredients of a complete, sound, effective safety program.

Be sure to read them . . . use them!

They provide a "kit of tools" with which you can build and maintain an effective accident prevention program of your own.

SAFETY INSTRUCTIONS

In This Highway Safety Program for Commercial Vehicle Operators

THIS ISSUE: Management Responsibility

NEXT ISSUE: Driver Responsibility

SUCCEEDING ISSUES:

- Driver Selection, Training and Supervision
- Accident Reports and Records
- Human Engineering
- Visual Information . . . Contests . . . Awards
- Group Safety Meetings . . . Development of Safety Committees
- First-Aid Training
- Conservation of Equipment
- Unusual Highway Hazards; Winter Driving; Holiday Hazards; Night Driving; Highway-Railroad Grade Crossings
- Fire Prevention
- Safety Through Courtesy . . . Defensive Driving

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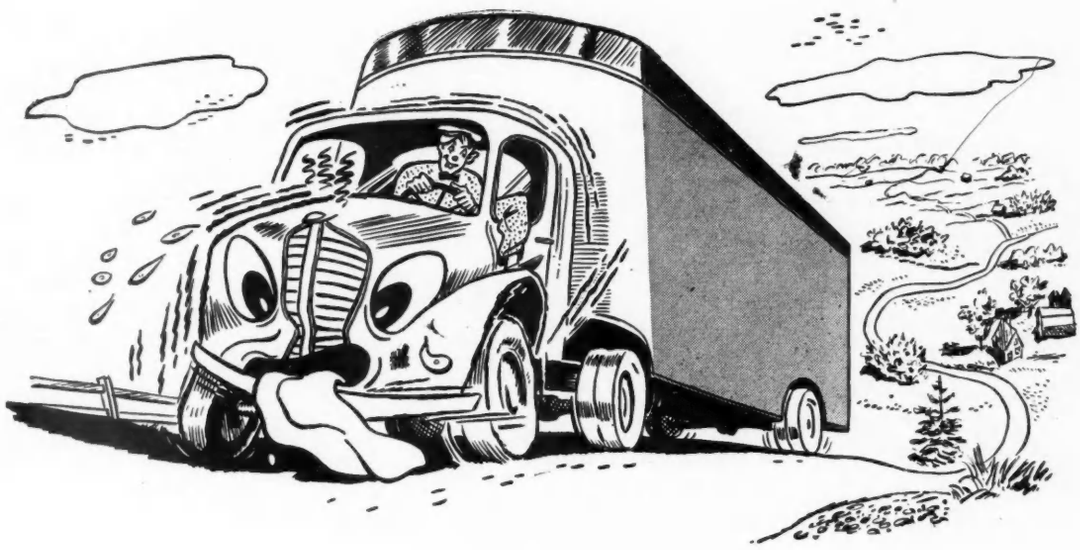
CCJ Bulletin Board



An Engine Lugger Is a Lughead!

A Shift in Time Saves Nine—Engine Overhauls

Are you an engine lugger? Do you permit your vehicle to pull down on hills or at low speeds until it sounds like a freight train starting up from Podunk Station? If you do, you are costing your company a great deal of money. You are pulling the guts out of that "horse"—and you are making your job of driving hard work

When your engine pulls down to a lugging condition, shift down. You'll save time in the long run—and you'll be more sure of getting back home with a "healthy" vehicle. Here's why:

A LUGGING ENGINE IS AN UNDEPENDABLE ENGINE. It eats profits and produces poor efficiency in return. It will fail prematurely, and let you down on the road.

A LUGGING ENGINE BEATS UP BEARINGS, due to several forces introduced with low speed and high torque.

A LUGGING ENGINE WASTES HORSEPOWER, because the poor old powerplant can't get up enough speed to put out the energy.

A LUGGING ENGINE WASTES GASOLINE, because it is inefficient. Tramping on the accelerator merely provides more fuel than it can burn and the excess is thrown out through the exhaust.

A LUGGING ENGINE OVERHEATS, because it is overworked. This is due to extra friction, poor circulation of both air and coolant.

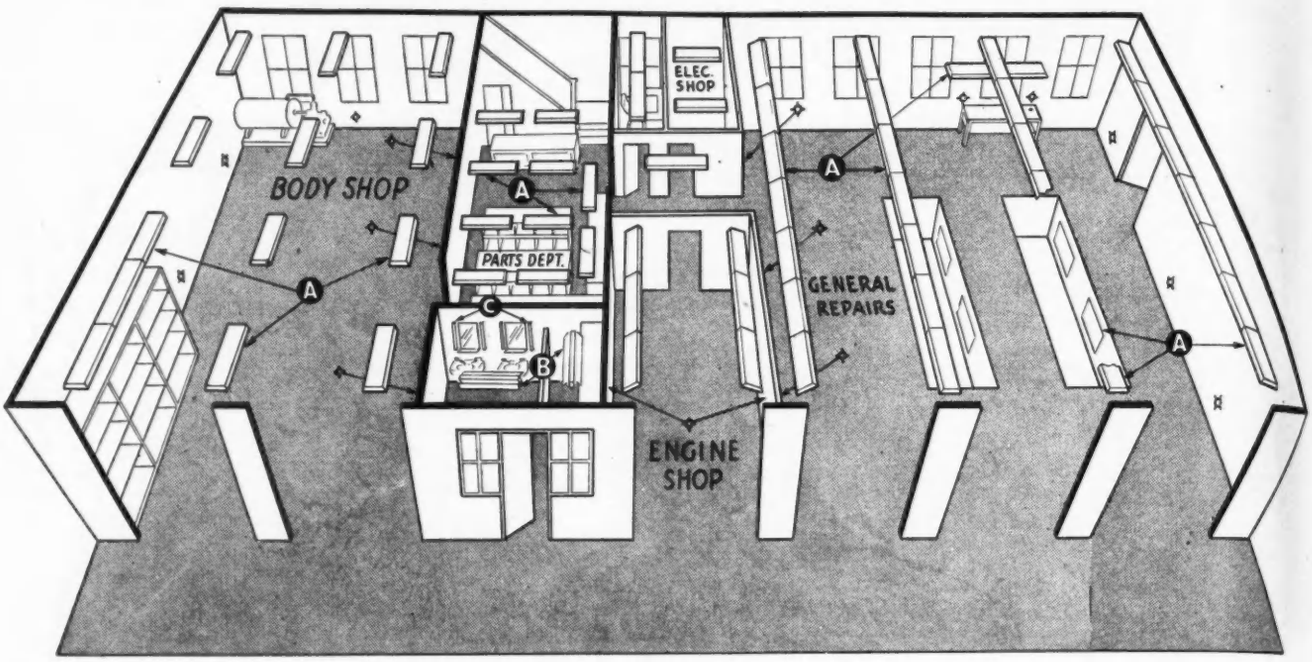
A LUGGING ENGINE USES OIL—because of the wasted raw gasoline which runs down the cylinder walls, past the rings and into the crankcase. This washes away the normal film of lubricant, allowing excessive friction, overheating and scoring.

A LUGGING ENGINE IS A SIGN OF LOSS OF POWER AND EFFICIENCY—but it may not be your fault. It may be due to wear, improper adjustment or excessive friction in the power train, so that you can't get sufficient power from it.

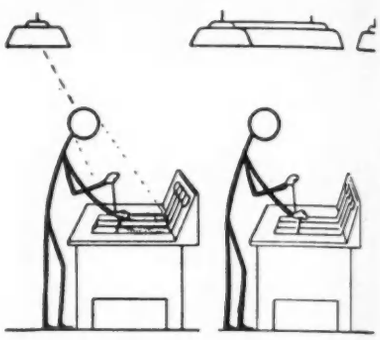
BUT *it is your responsibility* to know a lugging engine and report any condition which you cannot remedy by proper selection of gears to meet road and load conditions.

THEN YOUR JOB WILL BE EASIER. You'll make better schedules and you will be in a better humor when you climb from behind that wheel.

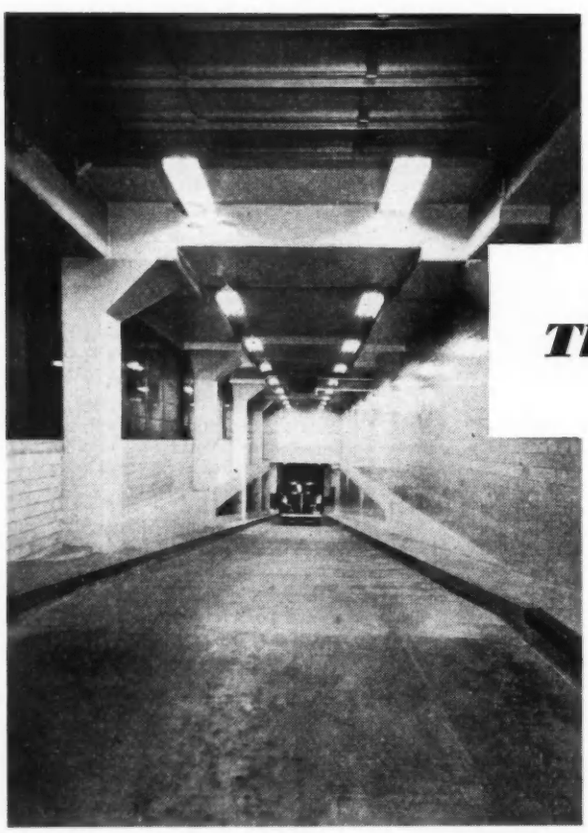
So Shift Down and Ease Up the Job of Driving!



Drawing of a well-organized shop with fixtures and outlets located where they are most efficient. A. is used where downward light is required. B. Open top reflector for ceiling light. C. Washroom lighting



SHADOWS hinder good work. Figure at right has benefit of adequate light



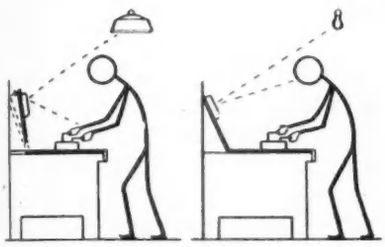
Ramps are hazards if not properly lighted. Good lamps, light walls, white floor, windows, provide required light

The Well-Lighted

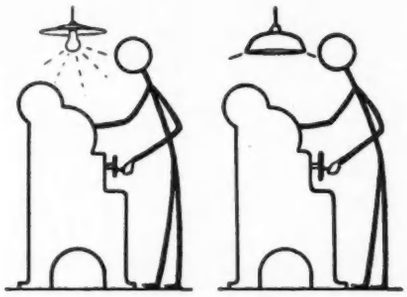
THE TRUCK operations of fleet owners present many problems in common. Due to the highly individualized character of many truck fleets, however, there is seldom a standardized solution to these common problems. Today, for instance, and for some time past, it has been profitable for operators to keep trucks in good condition for longer periods. With business booming, and more competition for all replacement units available, maintenance has developed a larger importance.

Maintenance policy, of course, must be worked out in most cases on a compromise basis. Garage facilities are essential to maintenance, but circumstances rarely provide the facilities in a way to make the maintenance program most effective. In the face of difficulties, which

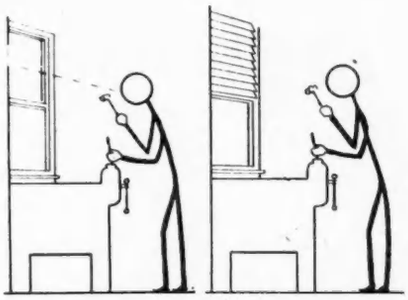
40 fc of general lighting are provided with 2-lamp units in continuous rows. White walls and surfaces give high reflectance



REFLECTED GLARE is harmful. Locate machines and reflectors properly



DIRECT GLARE cuts efficiency, wastes light. Reflector (right) solves problem



DAYLIGHT GLARE causes fatigue, time loss. Use shades or re-locate equipment

Shop Puts Fleet Operations in High Gear

by J. C. FORBES

and

J. L. TUGMAN

Engineering Division, Lamp Department, General Electric Co.

are more often the rule than the exception, the problem seems to get ahead of solutions. In many instances the inadequacy of garage space is such that more important servicing is seldom considered, rarely undertaken.

Fortunately, there is one approach to the situation which has the advantage of being relatively simple, inexpensive and highly flexible. This is through the application of practical lighting techniques to the specific needs of the garage to develop the space more fully and efficiently.

The truck operator who owns his garage is in position to consider the advantages of a complete relighting program. He can get the largest benefits from this improvement. By contrast the operator who rents garage space may feel reluctant to spend the money required to get the best return. But there is such flexibility in the techniques available that he can get very good results with portable and semi-portable equipment. As a matter of fact, combinations of portable and permanent equipment are necessary to almost every well-balanced garage lighting program.

Systematic relighting should be

(TURN TO NEXT PAGE, PLEASE)

The Well-Lighted Shop . . .

Continued from Page 55

Engineers show why proper light intensity, reduction of glare and elimination of shadows are vital to work efficiency and explain how these can be accomplished

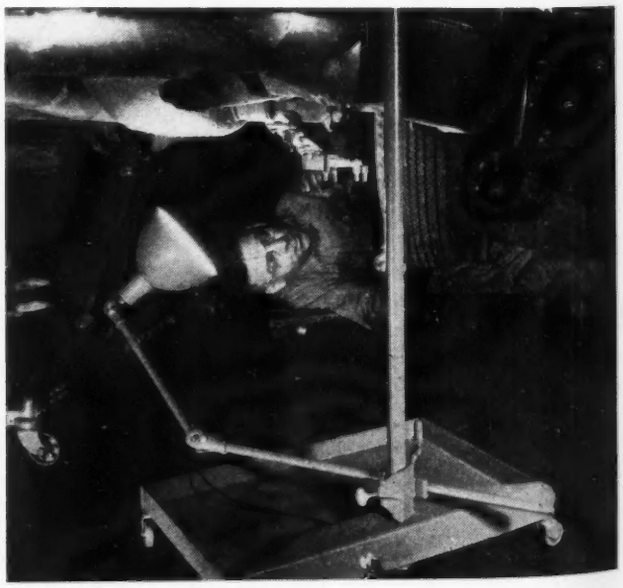
specified on the basis of the use of floor space. Once the floor plan for a definite assignment of functions is settled, an effective lighting system can be designed. If space is too limited to include provision for all functions in separate areas, the lighting plan should be flexible enough to permit more than one operation in one area. Thus the resolve to light up the work areas most vital to the efficiency of the fleet will pave the way to put repair facilities in top condition.

Before looking into specific recommendations, let us make a brief review of elementary information about lighting. Let us get straight some of the fundamental reasons that make lighting the tonic first step in developing more efficient garages. The "good and bad drawings on pages 54 and 55 offer the comparison between fundamentals observed and fundamentals neglected.

While it goes without saying that work cannot be done in the dark, this obvious wisdom is often disregarded in the typical garage. People are misled, of course, by the assumptions they make as a result of the wonderful adaptability of their eyes. It is possible to see large objects on a dark night, or in a relatively dark room. No important work could be undertaken under such conditions without considerable risk of damage to vehicles being repaired. Neverthe-

ABOVE—Three rows of closely-spaced filament units plus four angle units provide ample illumination for washing

BELOW (left)—Supplementary lighting provided here with industrial reflectors and 3-lamp glass-covered units



BELOW—Either fluorescent or filament lamps on adjustable, portable stands improve light in restricted areas

less, we often undertake to do work on valuable machines at levels of illumination which do not permit easy, accurate seeing. Attempts to remedy such situations through the use of inadequate local lighting units often result in glare conditions which aggravate the initial difficulty.

Fundamentals of good lighting are not hard to grasp. Once appreciated no one would want to miss their good effects which pave the way for the creation of genuinely desirable seeing conditions for all tasks. Truck operators, well aware of the design features in the work capacity of various trucks, should appreciate that lighting design is a powerful factor in the work capacity of industrial space. Good lighting includes consideration of its quantity and quality.

Quality Considerations

MERELY providing enough light is not a sufficient answer. There are three important factors involved in specifying light for any garage application. They are (1) the reduction of glare, (2) the elimination of shadows, (3) the maintenance of brightness as within established limits and (4) good maintenance characteristics.

Glare is one of the most frequent and one of the most serious faults that an illuminating engineer finds in installations serving garages and industry in general. Glare is uncomfortable light usually direct from the lamp bulb, and to lesser degrees, from the fluorescent tube itself. From the eye's natural reflex actions to shut out uncomfortable light, we get the familiar "blinding glare," an awareness that glare hinders seeing. Even if it is not blinding, most glare is tiring.

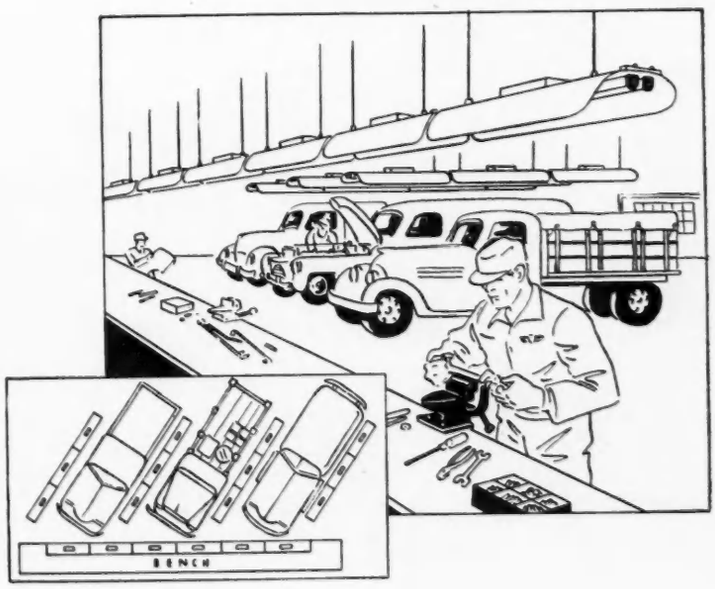
Glare can be reduced by proper shielding and positioning of the light sources with respect to the worker and his work. While industrial lighting equipment may be

(TURN TO PAGE 122, PLEASE)

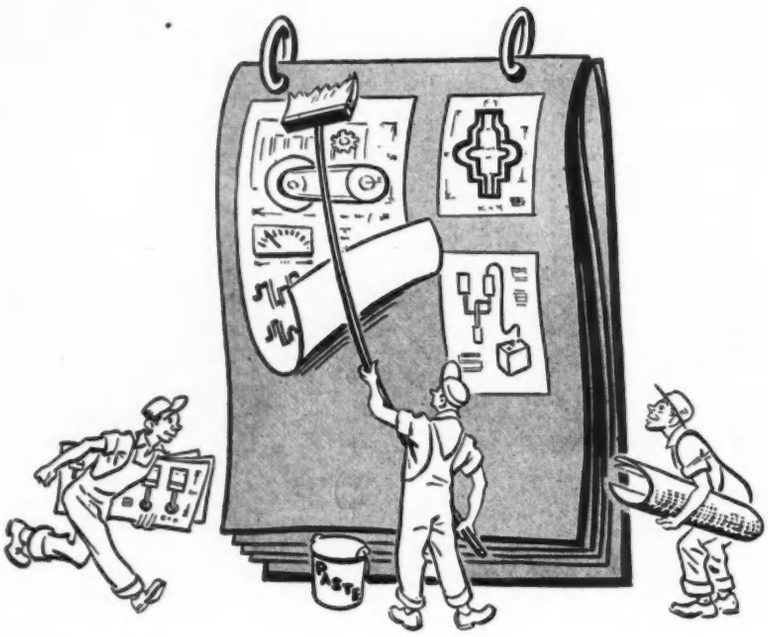
ABOVE—Overhead system of closely-spaced, explosion-proof units insures high level illumination for painting

Semi-portable paint booth has industrial light units overhead and on sides at two levels to insure proper vision

A continuous row of 2-lamp, 40-watt fluorescent fixtures provides adequate lighting for precision work at benches



2-lamp fluorescent units over alternate sections of parts bins adequately light storage area, make service snappy



Scrapbook

of Practical Fleet Practices

Low-Cost Crane on Stake Frame

HARGIS MOTOR CO. of Houston, Tex., has incorporated a crane on the removable stake frame of its service car (see cut above). This very low cost crane is built on one of the stakes by sliding a section of 2-in. pipe over the 1½-in. pipe which is used for the main frame. By strengthening the place where the stake fits with quarter-inch plate material, and installing a thrust bearing on the end of the 2-in. pipe, the crane was made to swing evenly. The outer end of the horizontal 2-in. piece contains a hole with an eye bolt into whi which the chain hoist hooks. A short length of chain prevents the boom from swinging out beyond a right angle with the rear of the truck.

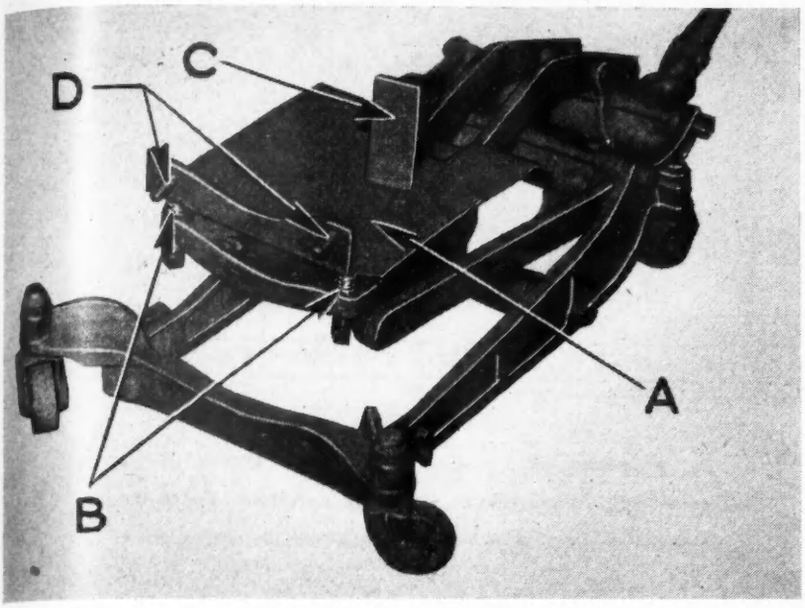
With this rig, engine exchanges can be made directly in the field, a mechanic and helper going out in the morning with the new engine and returning in the evening with the old one.

Placards Encourage Frequent Tire Inspections

PLACARDS and frequently changed wall signs stressing need for frequent tire inspections has resulted in a sharp reduction of flat tires from nails for the Dan Dugan Oil Transport Co. fleet, Sioux Falls, S. D.

Interest is kept high by frequent changes in the signs. The most effective sign was the one shown above which displayed 15 nails, tacks and pieces of steel which were dug out of a single tire. It reads: "Don't Let Your Tires Leave You Flat. These 15 'Tire Bandits' Removed From One Tire. Regular Inspections Pay."

Other placards carried similar themes. Records indicated drivers asked for tire inspections more often.



EDITORS' NOTE: 'Round the clock and 'round the country CCJ correspondents are on the alert for practical ways of doing things better. Anybody could dope out a crane like the Hargis one, for instance, but did you?

Heavy-Duty Rear End Jack

W. F. HURST, shop foreman for Boyd Truck Line, Kansas City, Mo., has built an attachment for a transmission jack (see cut above) which speeds up installation of heavy-duty double reduction differentials in Mack tractors.

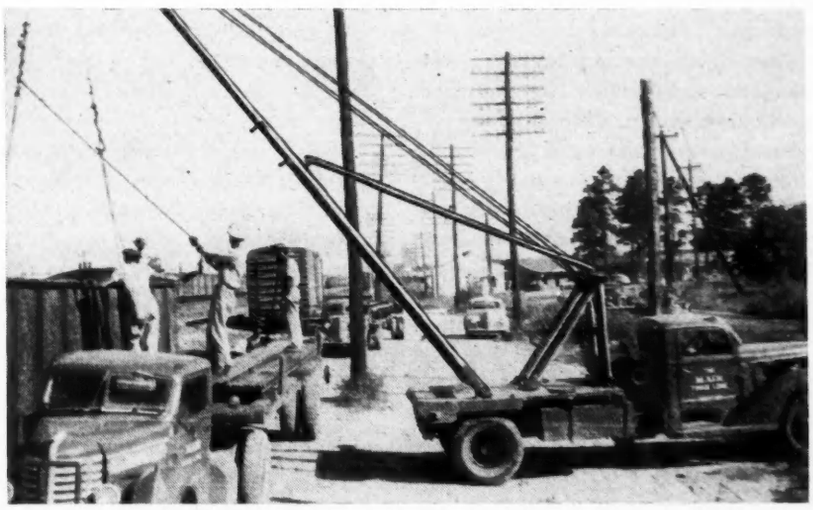
Essentially the device is a steel plate which supports the unit at the proper level. This plate (A) is made from ¼-in. boiler plate, is 11 in. square, and has short pins (B) which hold it on a Waever transmission jack. These pins hold it securely in position, yet it can be lifted off easily when the jack is to be used conventionally. A short piece of angle iron (C) is welded to the plate in a vertical position to support the assembly end.

But the real time-saving feature of the gadget is the method of aligning the unit. Two bolts (D) in the front of the plate go through holes in the rear gear and pinion housing assembly. When the unit is jacked high enough to align these bolts with their respective holes in the banjo of the axle, the assembly slides directly into place and may be immediately bolted up.

Collapsible Gin Poles Unload Pipe from Car

WHERE a winch truck is used to unload pipe from railroad cars, it is difficult to get the truck spotted so that the pipe will swing out evenly to the truck that is being loaded. The Main Truck Line of Houston, Tex., overcame this difficulty by making a telescoping gin pole with telescoping brace so that the top of the gin pole could be placed where it was needed. This extended set of poles also finds many other hoisting uses in the trucking business.

The gin pole is made from three sizes of pipe, each fitting inside the other. The largest size is 6 in. which is hinged to the bed of the truck. The next size is 5 in. which telescopes inside of the 6 in. and is adjusted by means of a ¾-in. pin and matching holes. Four-inch pipe is then run inside of the 5 in. also with a pin and matching holes. The gin pole then telescopes from 18 ft to 45 ft when entirely extended. At the outer end of the gin pole, a 3-in. tee is welded on containing the two blocks for the winch lines and the ends of the guy wires which are used to raise and lower the poles. This is accomplished by means of a hand winch which is made from 5-in. pipe, fastened to the end of the headache post. The brace between the headache post and top of the 6-in. pipe is made from 2½-in. pipe which telescopes inside of 3-in. pipe. When the ¾-in. pin in these is set, the guy wires are tightened sufficiently to make a solid framework and the hoisting operation is commenced.



A selected list of the latest literature—catalogs, pamphlets, charts—chosen to help fleetmen improve operation and maintenance

L180. Fleet Forms

The problem of maintaining accurate and complete fleet service and maintenance data has been simplified by a copyrighted system now being used by many large fleet operators throughout the country. Designed by a fleet accountant with many years experience in meeting the headaches involved in keeping accurate and complete information on every vehicle in a fleet, the forms in this system can be easily kept up-to-date by any attendant. They are simplified, yet are both accurate and complete. Included in the Fleet Forms system are Cost and Service Records, Gas Pump Detail Records, 1000 Mile (or 30 Day) Inspection Reports, Drivers' Receipts, Drivers' Trip Reports, Cashiers' Vouchers, Service Call Reports, Service Orders, Service Reports, En Route Service Reports and "Avoid Verbal Orders" pads. Each form can be ordered separately.

In addition, a practical Driver's Accident Report has been developed which provides the driver with valuable help in securing maximum information on the spot, in case of an accident.

One of the outstanding forms is the Cost and Service Record which shows every operation to be performed periodically on a vehicle. An attendant can quickly see when service on a unit was last performed and when servicing is next due. It shows lubrications, tire and battery inspections, oil and filter changes and other preventative inspection information can be easily scheduled and followed with the use of this Cost and Service Record.

Samples of all Fleet Forms are available upon request. Just write L180 on the free postcard.

L181. Size & Weight Limit

An up-to-date chart prepared by Truck-Trailer Manufacturers Assn., and showing vehicle size and weights restrictions for all states and the District of Columbia is now ready for fleet distribution.

Shown in the new chart are permissible heights, lengths of single units, tractor semi-trailers and vehicle combinations; maximum axle load in pounds for all rigs; state formulas on which weights in some instances are based; and whether the weights are permanent, temporary or permissible only on designated highways.

Copies of the "Watch Your Weight" chart may be obtained free, or in quantities, by writing L181 on the free postcard.

L182. Valve Failures

"Engine Valve Failures" is the title of this 6-page bulletin issued by a well-known oil company in the interest of helping fleets obtain longer valve life.

Valve failures must be diagnosed carefully to determine true causes of the failure, says the author, and then operators must adopt proper remedies to prevent recurrence. In this manner both intake and exhaust valve breakdowns are studied, with drawings and actual photographs provided to show the effect of various abuses.

The author mentions insufficient tappet clearance as one of the most prevalent causes of valve burning or sticking. He provides practical pointers on valve guide maintenance as a means of improving valve life. Another common cause of such troubles is listed as overheating through lean air-fuel mixtures, improper ignition timing, hot running spark plugs and inadequate cooling by the cooling system.

Your mechanics should take a few minutes to look over these valuable pointers. Write L182 on the free postcard and ask them to read this bulletin.

L183. Cleaning Tips

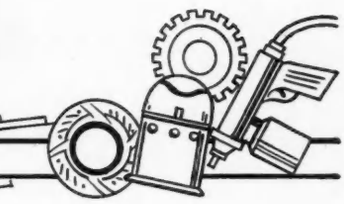
How clean-up routines are being simplified, equipment down-time reduced, costs lowered and many man-hours saved through the use of steam-detergent cleaning methods, is discussed in a booklet now available to fleet operators.

The article defines steam-detergent cleaning as the simultaneous application of heat, steam pressure and detergent solution—a threefold combination so effective that scarcely a soil will stand up against it—that makes possible important time, cost and work savings.

In addition to listing the application of the steam-detergent method in removing various types of soils encountered in different industries, the article also provides interesting illustrations of actual steam-gun equipment cleaning and paint-stripping operations.

Write L183 on the free postcard for a copy of this booklet.

NEW PRODUCTS

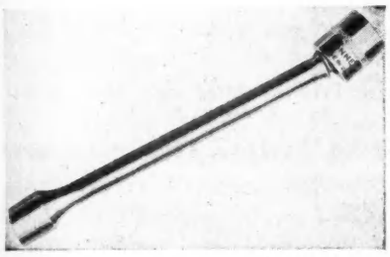


USE POSTCARD—NO STAMP NEEDED

The newest in replacement parts, accessories, shop equipment, supplies — illustrated and described in brief for the fleetman

P28. Wobble Drive

Designed for work in close quarters this tool enables a mechanic to obtain a small amount of swivel and to work on a nut or bolt with the extension leaning at an angle of approximately 12 deg in any direction without the use of a universal joint.



The male end is a 3/8-in. wobble drive, and the female end is a 3/8-in. square drive for attaching a ratchet, hinge handle, speeder or T handle. BONNEY FORGE AND TOOL WORKS, Allentown, Pa.

Use Free Postcard For More Details.

P29. Multi-Purpose Grease

Valvoline "X-5," Multi-Purpose Grease, replacing chassis lube, wheel bearing grease, universal joint lubrication, covered springs and water pump lube, saves space, inventory, mistakes and money.

X-5 changes very little in body up to 400 deg F. Does not combine with water. Sticks where it is placed, but enables equipment to resist rust, the company states. FREEDOM-VALVOLINE OIL CO., Freedom, Pa.

Use Free Postcard For More Details.

P30. Truck Seat Cover

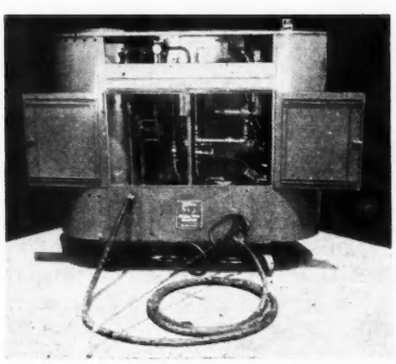
Fiberkloth, made of fiber heavier and stronger than car seat material, is heavily-lacquered, making it water-repellent, stain resistant and smooth. CRAWFORD MANUFACTURING CO., Richmond, Va.

Use Free Postcard For More Details.

P31. Storm King Cleaner

Designed for speedy cleaning the Storm King steam cleaner utilizes 180 gal of water per hour. As a high pressure rinse, it uses 240 gal per hour, with a pressure of 150 lb for either operation.

Available for natural gas, manufactured gas or oil heating, it can be provided in models for stationary,



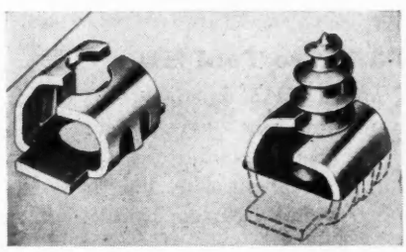
portable or trailer use. Working parts are easily accessible. Heating to operating pressure is instantaneous and thermostatically maintained. A 64-gal graduated solution tank prevents shut-down to re-fill. TURCO PRODUCTS, INC., Los Angeles.

Use Free Postcard For More Details.

P32. Snap Nut for Metal

Spring steel snap nuts designed for quick anchoring nut-to-panel for blind attachments save welding, riveting or clinching. Nut is simply pressed into assembly position, is attached directly from the work surface and can be easily removed when necessary.

It snaps into a 9/32-in. square hole, .037 to .035 in. thick and will



accommodate both No. 8 and No. 10 sheet metal screws. Will withstand a tightening torque of 35 to 45 lb. PRESTOLE CORP., Toledo, Ohio.

Use Free Postcard For More Details.

P33. Windshield Washer

Automatic, and operating independently of the engine's vacuum system, the Aquamatic windshield washer provides as much or as little water as needed with the touch of a button. Water is cleared with a standard wiper.

Installation can be made in a short time for either hand or foot operation. E. EDELMANN AND CO., Chicago, Ill.

Use Free Postcard For More Details.

P34. Plastic Body Repair

Savings in time and material are said to be attained through the use of Gabriel Metalume and Celastic,

(TURN TO NEXT PAGE, PLEASE)

NEW PRODUCTS

USE POSTCARD—NO STAMP NEEDED

(Continued from page 61)

a new metal plastic filler with high adhesive quality, used for body and fender repairings.

Metalume is used as a filler or surface coating. Applied with a spatula, squeezee, or brushed on.

Celastic is a colloid-treated fabric used to cover large worn or rusted areas in the body or fender. It is hand-molded and applied in any shape. It may be sanded, feather-edged and covered with the Metalume for a permanent metal repair. THE GABRIEL CO., Cleveland, Ohio.

Use Free Postcard For More Details.

P35. Aro Tool Kit

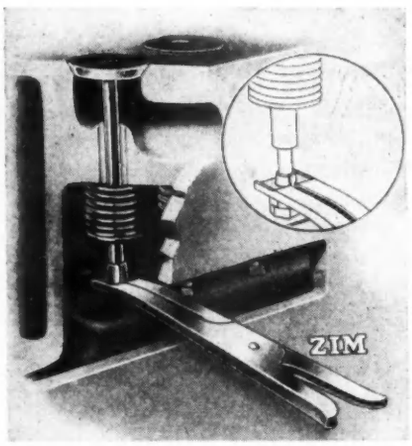
Model 7115 kit includes an air motor in a pistol-grip housing, with attachments including 5-in. polisher, 4-in. wire brush, 1-in. hole saw, ¼-in. drill and a carbon brush tool.

Design of the tool combines light weight with speed and power for polishing, grinding, cleaning, compounding, etc. Speed is adjustable from 700 to 2400 rpm through speed regulator on base of handle. Tool features stall-proof operation at 90 lb. pressure and at a consumption rate of 5 to 7 cfm. Light enough to permit one hand operation and reduce operator fatigue. THE ARO EQUIPMENT CORP., Bryan, Ohio.

Use Free Postcard For More Details.

P36. Zim Service Tools

Horm bushing puller No. 900 removes bushing from Chevrolet and other vehicles with ease. Weighing 4 oz., the puller is all steel construction and has a cadmium plated finish.



The magnetic key inserter designed for replacing split valve keys employs permanent magnets in the jaw tips of the spring-controlled levers which hold the keys firmly, permitting the mechanic to have both hands free while working on the assembly. Weight 4 oz. Made of steel. ZIM MANUFACTURING CO., Chicago, Ill.

Use Free Postcard For More Details.

P37. Electric Drills

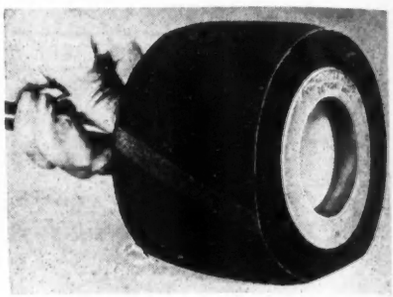
Eight new models equipped with the K-O keyless drill chucks, ranging in size from the ¼-in. lightweight to the ⅞-in. unit.

In addition, two new model 7-in. bench grinders are now available as well as a 6-in. model. Standard equipment includes two grinding wheels, fine and coarse, adjustable tool rests and an abrasive wheel dresser. K. O. LEE CO., Aberdeen, So. Dak.

Use Free Postcard For More Details.

P38. Grinder Wheel

Featuring a pneumatic rubber drum inflated at low air pressure and fitted with standard type abrasive bands to surface grind or sand curved surfaces, the Nu-Matic grinder wheel is said to permit flexibility and a wide variety of finishes on all types of surfaces.



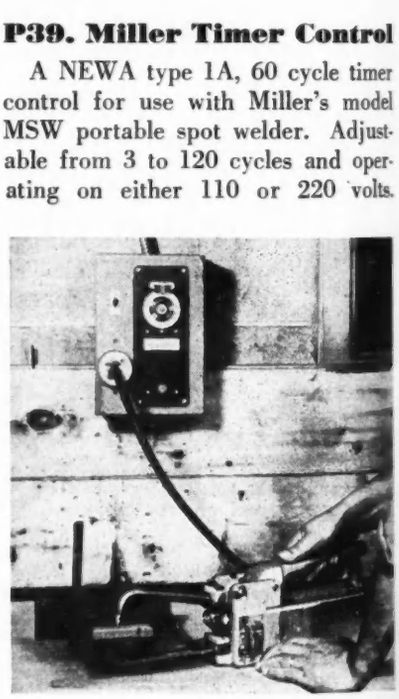
Air pressure is adjustable from 3 to 10 lb. Varied rpm speeds are possible to suit the work requirements. Bands can be changed easily and quickly. Grinder marks are said to be eliminated, and work coverage is reported to be faster.

The rubber drum is 5 in. in diameter, taking abrasive bands 3½ in. wide x 5 in. Unit weights 2 lb. By means of available adapters wheel fits any power shaft tool. NU-MATIC GRINDERS, INC., Detroit, Mich.

Use Free Postcard For More Details.

P39. Miller Timer Control

A NEWA type 1A, 60 cycle timer control for use with Miller's model MSW portable spot welder. Adjustable from 3 to 120 cycles and operating on either 110 or 220 volts.

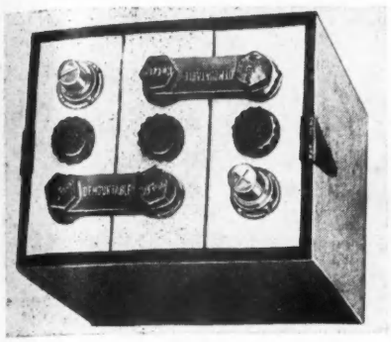


Designed to mount on a wall, or a work bench. MILLER MANUFACTURING CO., Appleton, Wis.

Use Free Postcard For More Details.

P40. Demountable Battery

A light, "air-conditioned" outside container, said to keep the elements in the battery at the same even temperature by providing full acid circulation, full air circulation for each cell. Individual cell jars are designed so the cover has eight supports to suspend the elements, preventing injury from shock and vibration. A precision-fit cover prevents acid from seeping from one cell to another. Elements have the same type post so that the positive or negative posts can be adapted to any cell.



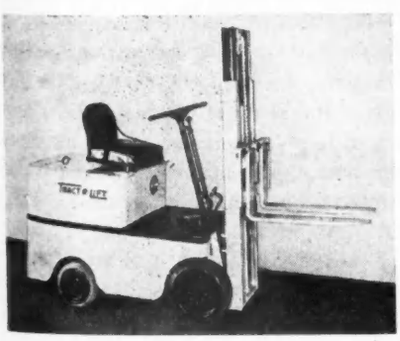
This battery can be taken apart, repaired and reassembled easily. ASSOCIATED BATTERY ASSEMBLERS, Los Angeles, Cal.

Use Free Postcard For More Details.

P41. Tract-R-Lift Fork

Compact, gas-powered, with a 2000-lb capacity the Tract-R-Lift fork truck measures 28 in. in width, 61 in. in length, 60 in. high and weighs 3050 lb. Designed for rapid materials handling through narrow doors and in cramped quarters the truck has a turning radius of 6 in. inside, 67 in. outside.

Single hydraulic lift-and-tilt control lever raises or lowers fork truck and tilts load forward or backward in any combination desired. Maximum fork height with 5-ft mast is 84 in.; with 7-ft mast, 108 in. Mast has a 5-deg tilt forward and a 10-deg tilt backward from vertical. An automatic stop is provided at maximum lift height. Forks are adjustable from 9 to 26 in. TRACT-R-LIFT CORP., Chicago, Ill.

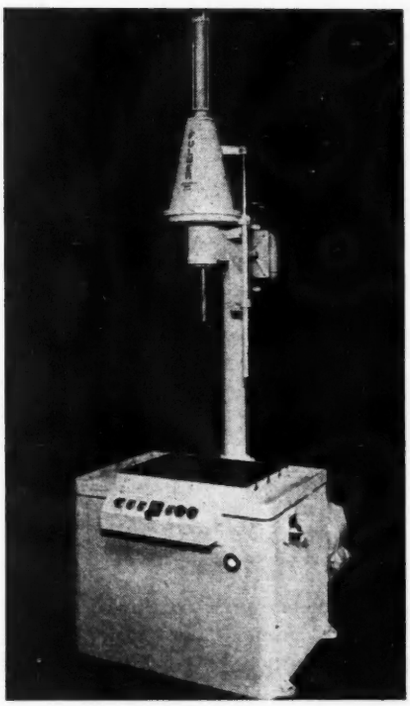


Use Free Postcard For More Details.

P42. Hydraulic Honing

Small in size, hydraulic powered, this spindle honing machine is designed for rapid honing of any type of internal cylinder ranging from ½ to 4 in. in diameter. Has a maximum stroke of 12 in. Reciprocation is by means of a hydraulic cylinder, allowing speeds from 0 to 80 fpm.

Hydraulic power is supplied through a Vickers vane pump driven by a 3 hp motor. The spindle is driven by a 3 hp motor, making available three spindle speeds. Coolant is delivered by a 1/10 hp Ruthman motor-driven pump. Timken bearings used throughout. Working table is 18 x 24 in. in size with T slots for ⅝-in. bolts placed so the machine can accommodate work pieces up to 21 in. in outside diameter. Controls are mounted in front in the form of a push button blank.

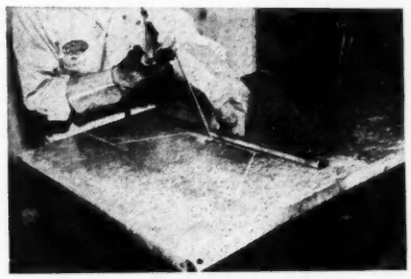


Model 412 occupies 41 x 48 in. floor space, is 100 in. high and weighs approximately 2500 lb. C. ALLEN FULMER CO., Cincinnati, Ohio.

Use Free Postcard For More Details.

P43. Cutting Electrode

Smaller diameter metal cutting electrode for cutting thin sheet metals has a 3/32-in. diameter Cuttrode and is recommended for stainless, bronze, nickel, copper.



The Cuttrode for cast iron, stainless, bronze, aluminum and other metals is also available in sizes ⅛ in., 3/16 in. and ¼ in. EUTECTIC WELDING ALLOYS CORP., New York, N. Y.

Use Free Postcard For More Details.

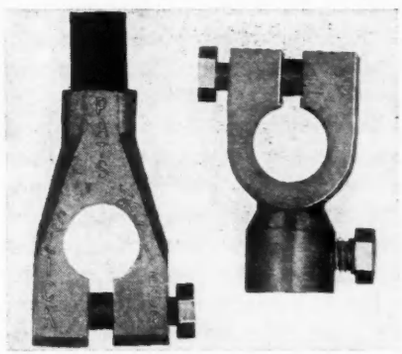
P44. Ramco Parts Cleaner

Harmless to hands and fast-action characterizes this new cold parts cleaner for removing carbon, gums, dyes, baked-on grease and oil deposits from such units as the carburetor, fuel pump, hydraulic brake equipment, pistons, valves, and gears. Non-inflammable, the liquid has a special top layer seal to retard evaporation, odors and freezing. RAMSEY CORP., St. Louis, Mo.

Use Free Postcard For More Details.

P45. Cable Terminal

Fabricated from a non-corrosive alloy the battery connector features a right hand threaded bushing in one jaw and a left hand threaded bushing in the opposite jaw. A bolt with right and left hand threads engages the threads so that a short turn tightens the connector. One wrench is necessary for the job.



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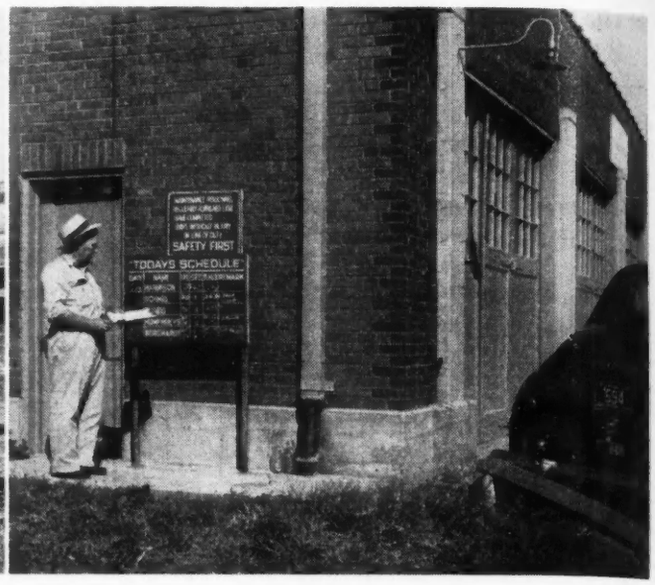
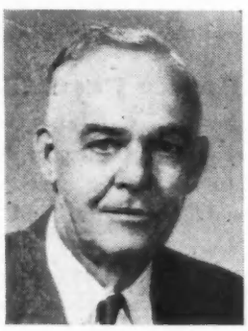


Traveling Inspector W. O. Porter checks condition of tractor in the field (left) and notes bulletin board at Div. 5 maintenance shed (above). He uses a standard business coupe



R. P. CUMMINS
Supt. of Equipment, Missouri State Highway Department

INSPECTORS . . .

Travelin' men from State headquarters with "show me" attitude and plenty of authority work hand-in-hand with division crews to keep 2642 highway vehicles in top shape

HOW TO KEEP track of the 2642 pieces of automotive equipment under its care, is but one facet of the complex job of the Bureau of Equipment, Missouri State Highway Department.

This equipment, representing an investment of several million dollars, is scattered over 69,270 square miles, 114 counties and 16,000 miles of improved highways. It may be found in the ten highway divisions of the state, at the 114 county highway sheds, or the more than 300 gasoline stations owned by the state.

This giant fleet is composed of hundreds of trucks of all sizes from the half-ton pickup to the giant. It contains motor graders, bulldozers, track-type tractors, mobile tar pots, motorized electric welders, air compressors, motorized pumps, trailers, highway markers, concrete mixers, high-lift tractors, draglines, power shovels, ditching machines, giant rollers, compacting machines, machine loaders, paving machines, highway sweepers, snow plows.

The list of engines to be serviced staggers the imagination. There is Caterpillar, both gasoline and diesel, in six sizes; Buda, gasoline and diesel, in several sizes; Hercules, Chevrolet, Buick, Dodge, Plymouth, International, both gasoline and diesel and in many sizes; Waukesha, Ford, LeRoi, Cummings and Wisconsin.

The Bureau of Equipment, of which R. P. Cummins, is superintendent, not only keeps track of it down to the last oil can and wrench, but keeps it all properly serviced and repaired. In addition, it keeps a record of each piece of equipment showing the amount of work it has done and its worth to the state. These records give hours of use or mileage, or both, an itemized list and cost of repairs over its life span, its fuel, lubrication and service cost. A glance at these records will indicate whether or not it has been profitable for the state to own the equipment.

Centralized control for this far-flung fleet is responsible for the efficient service program handled by a tightly knitted supervisory organization, with outlined responsibilities.

Traveling Mechanic C. J. Struempf with tool-laden pick-up truck helps out on a tough job. At left is Fred Heckel, headquarters shop foreman and field supervisor in Division 5

. . . from Missouri

by L. H. HOUCK
CCJ Staff Correspondent

T. W. JOHNSON
Assistant Superintendent of Equipment

JOHN O'REAR
Superintendent of Headquarters Shop

Four General Inspectors

FOUR general mechanical inspectors constantly inspect the state-owned equipment all over the state and make direct reports to the superintendent of the Bureau of Equipment.

These four inspectors report to the Bureau of Equipment every Saturday morning. They turn in their reports which are made in single copies only —they make no carbons or copies. The report gives the state number of the vehicle, the type, to whom it was assigned and its location. Recommendations are made all the way from seat covers to a new engine, or a new unit. The mileage is recorded, a note made of the unit's appearance and what care it is receiving.

These reports are then scrutinized in the office of the superintendent and normally are rewritten in duplicate and the recommendation is mailed to the foreman of the garage in the highway division in which the vehicle is located. The division foreman is required, in cooperation with the division engineer, to get the vehicle repaired at the earliest moment without interrupting the regular routine of the work.

On Monday morning of each week the crew of four inspectors report to the superintendent's office for assignments for the week. Each inspector is assigned to a new division if he has completed his work in one division.

Inspector "X" Starts for Joplin

WE'LL take an imaginery trip with an inspector this Monday morning. Our inspector has just told Supt. Cummins that he has finished his work in Division 3. He is assigned Division 7 which is down in the southwestern corner of the state, with Joplin as the location of the division garage.

He has received the Division 7 assignment because he has not worked in this division for nearly a year. They don't want an inspector to work the same division all the time and inspectors never know what division they are going to draw. They do, however, work in a division until they have inspected every vehicle in the division, which sometimes requires three weeks.

My inspector was ready to go. I found he carries few tools. He can do a light tune-up, set points, but he is an inspector first. He travels in a state automobile and not a pickup truck. He carries field purchase orders and he can buy gasoline, automobile parts or anything else needed from anyone who has them to sell. This, however, is discouraged. He is requested to obtain parts from the regular stocks in the 10 division garages and in the headquarters garage in Jefferson City, and his gasoline from state-owned pumps.

We went over to headquarters garage where we were issued an automobile. He had to sign for it. When a highway patrol car was out of the way he had the tank filled with gasoline. He had to sign for that. A garage attendant checked the oil, the tires and cleaned the windshield, just the same as any other service station.

"We Work Our Way"

WE started south over U. S. 54 and soon passed through Eldon, the Bagnell Dam resort area. At Camdenton we noticed some state equipment working down a farm-to-market

(TURN TO PAGE 154, PLEASE)

Test Number 1 – Visual Attention

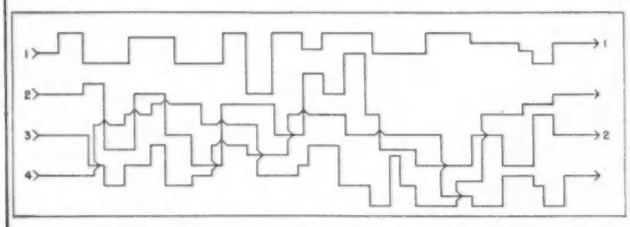
Instructions:

This is a test of your ability to keep your eyes on one object as you sweep through a field of many similar objects.

Your task is to follow each line from the left side of the page where it begins across to the right side of the page where it ends. You will then write the number of the line by the arrow head to show your answer.

For example, in the sample below, lines No. 1 and 2 have already been done to show you how. Go ahead and do 3 and 4 for practice. **Remember** to write the number of the line where that line comes out on the right.

Do not use your pencil to follow the line if you can help it. You will work faster if you depend on your eyes alone.



Test Number 2 – Depth Visualization

Instructions:

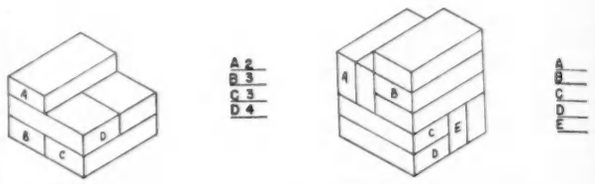
This is a test of your ability to see a drawing on a flat paper as if it had the third dimension of depth.

Your task is to count the number of blocks that are touching each block of the pile that has a letter on it. All blocks are the same size and the same shape.

For example, in the pile at the left, below, the block with an A on it touches **two** other blocks, D and the blank one beside it. Block B touches **three** other blocks, C, D and the blank one. Notice that these numbers have been put in the proper answer spaces beside the drawing. The same has been done for blocks C and D in the drawing at the left. Check them over to be sure that you agree and understand how the answers were found.

Now go to the pile of blocks at the right and practice on them. Your first answer should be 4.

Touching corners or edges are not counted. Flat surfaces must be touching. For example, the block on top of B in the drawing at the right is not touching the blank block between A and B.



Reproduced above and at right (at one-half actual size and by special permission of the copyright owners) are actual instructions and examples from

A New System for

Selecting Safe Drivers

by Dr. FLOYD L. RUCH

Professor of Industrial Psychology
University of Southern California

FLEET operators who are seeking to reduce the high cost of accidents by selecting the right men for the job now have available easier, less expensive testing methods. A battery of tests recently developed for the transportation industry shows three important advantages over currently used driver selection systems.

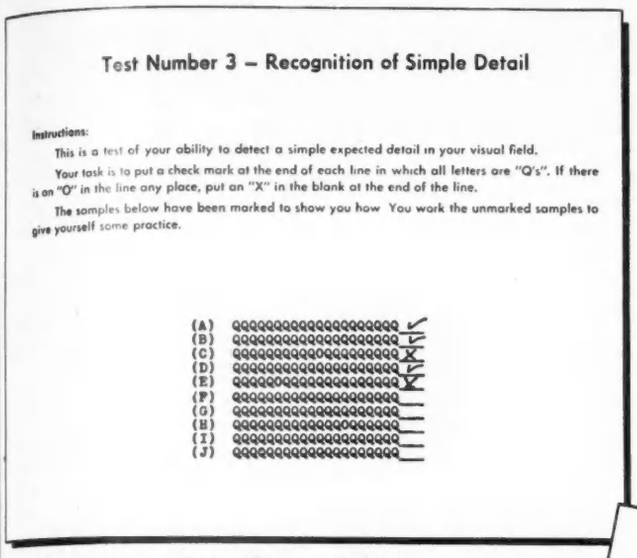
First, the new testing approach is inexpensive when compared with investments in costly testing equipment which is essential to systems currently applied. No equipment at all is necessary to run prospective drivers through the tests.

Serviceability is another feature. The tests are in booklet form and so designed that they can be administered by people without training in psychology. Taking the tests consumes about 45 min. and they can be given in groups. It is not necessary for the personnel man to spend a half hour or more with each man as is the case with the expensive testing apparatus used so widely in industry now. Trucking and transit companies certainly do not want to have to devote the full time of one or more employees and a room of valuable space to a selection program for drivers. The new tests make possible a decision on groups of applicants in a matter of minutes. This frees personnel people to spend more time in the equally important capacity of training.

Thirdly, the new tests are said to give a more valid, efficient appraisal of a man's aptitude. This is accounted for by the difference in approach. The basis for the new tests is the belief that accidents result from the inability of the driver to properly interpret what he sees rather than his slow reaction time or faulty depth perception. The testing is aimed more at mental, or perceptual abilities, than at the familiar psychophysical capacities of the driver. The important thing that keeps a driver out of accidents is his ability to interpret what he sees as being dangerous rather than his ability to react fast. Many people with fast reaction times are still experiencing high accident rates.

Simplified testing system

Conclusions on which the new system is based were developed in two years of experimentation with Los Angeles Transit Lines bus and street car operators. The results promise some relief to truck and bus operators from the costly driver accident, for drivers can now be picked whose accident records will be lower than those ordinarily found in the industry.



Test Number 3 – Recognition of Simple Detail

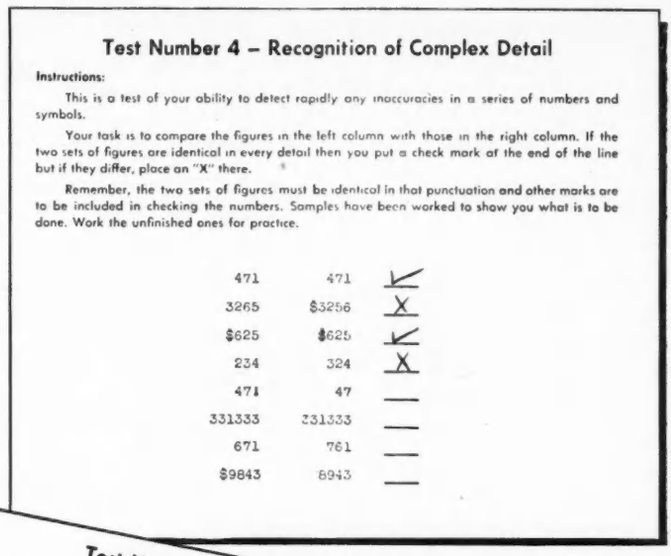
Instructions:

This is a test of your ability to detect a simple expected detail in your visual field.

Your task is to put a check mark at the end of each line in which all letters are "Q's". If there is an "O" in the line any place, put an "X" in the blank at the end of the line.

The samples below have been marked to show you how. You work the unmarked samples to give yourself some practice.

(A) QQQQQQQQQQQQQQQQQQQQ ✓
(B) QQQQQQQQQQQQQQQQQQQQ ✓
(C) QQQQQQQQQQQQQQQQQQQQ X
(D) QQQQQQQQQQQQQQQQQQQQ ✓
(E) QQQQQQQQQQQQQQQQQQQQ X
(F) QQQQQQQQQQQQQQQQQQQQ
(G) QQQQQQQQQQQQQQQQQQQQ
(H) QQQQQQQQQQQQQQQQQQQQ
(I) QQQQQQQQQQQQQQQQQQQQ
(J) QQQQQQQQQQQQQQQQQQQQ



Test Number 4 – Recognition of Complex Detail

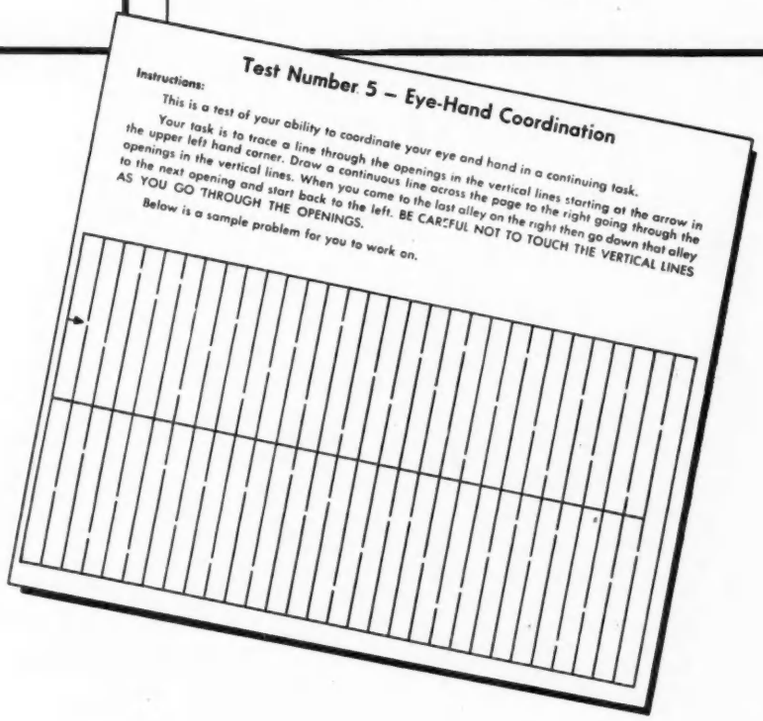
Instructions:

This is a test of your ability to detect rapidly any inaccuracies in a series of numbers and symbols.

Your task is to compare the figures in the left column with those in the right column. If the two sets of figures are identical in every detail then you put a check mark at the end of the line but if they differ, place an "X" there.

Remember, the two sets of figures must be identical in that punctuation and other marks are to be included in checking the numbers. Samples have been worked to show you what is to be done. Work the unfinished ones for practice.

471	471	✓
3265	$3256	X
$625	$625	✓
234	324	X
471	47	—
331333	331333	—
671	761	—
$9843	8943	—



Test Number 5 – Eye-Hand Coordination

Instructions:

This is a test of your ability to coordinate your eye and hand in a continuing task.

Your task is to trace a line through the openings in the vertical lines starting at the arrow in the upper left hand corner. Draw a continuous line across the page to the right going through the openings in the vertical lines. When you come to the last alley on the right then go down that alley to the next opening and start back to the left. BE CAREFUL NOT TO TOUCH THE VERTICAL LINES AS YOU GO THROUGH THE OPENINGS.

Below is a sample problem for you to work on.

Ruck-Wilson Safe Driver Selection System showing type of test given. After each example is a full page of actual test, similar but more complex

Dr. CLARK WILSON, Jr.
Director, Psychological Research Center of Business and Industry

needs no costly equipment; judges driver primarily on ability to interpret what he sees

Developing Test

HERE'S how the system was set up and run through. The figures showing the results are also given.

The first job was to make a thorough analysis of records of accidents that the company had accumulated. It was readily apparent that the problem of accidents was tied up with another, almost equally costly human failing—short length of service on the job. Labor turnover and accident tendencies were found to be related to a considerable degree. This meant that something also had to be done about the labor turnover as well as the accident problem. Here, however, we just cover the accident problem.

When the tests were begun, a single test was given to 1476 men, of which 530 men were put through a battery of 17 other tests. All tests were given at the time the men were hired so that the tests could be put to use in the same way they would if the selection were in actual everyday operation.

Test were included of every ability thought to have some relation to the job of driving. The method of selection is through a series of written

(TURN TO NEXT PAGE, PLEASE)

. . . Selecting Safe Drivers

Continued from Page 67

tests administered at one sitting. Instructions for the seven tests are reproduced on these pages. These are not IQ tests (and this is emphasized to the applicants), because research has found that the familiar IQ is related only very slightly, if at all, to "accident proneness." Instead, this new set of tests is intended to measure those visual and physical abilities, and temperamental qualities found to be related to the frequency with which a man gets into traffic trouble.

Some of the important characteristics measured by the tests are:

Perceptual Speed

1 Perceptual speed. This is the ability to visually detect and recognize those things in a person's view which are important to safe operation. If, for example, a man approaches an intersection and can quickly see all the vehicles, pedestrians, and blind corners, he is found to be less likely to get into trouble.

"Perceptual speed" differs from reaction time and is more revealing in that it is more like determining speed and accuracy of judgment. In the reaction time instruments, the element of judgment is lacking. The subject knows in advance what signal to expect and what movement to make. This situation seldom comes up in driving, where the emphasis is on ignoring irrelevant details and seeing significan ones. In fact, there are certain studies which show that an over quick reaction time goes with impulsiveness of disposition, and, interestingly enough, with tendencies toward radicalism in politics. Accumulated evidence indicates that the good driver is a steady, responsible, and conservative person.

Earlier studies of reaction time were made before the days of energized brakes when it was difficult for a person to stop a motor vehicle too fast. Today, fast stops and starts are a source of serious accidents to passengers and cargo.

Depth Visualization

2 Depth visualization is another characteristic measured. This is the important ability of a driver to judge the relative position of things in space. The lack of this ability keeps a driver from making accurate judgment on the movement of other vehicles relative to his own. This hinders his judgment of objects which represent an accident hazard.

The test is one to measure the ability of a person to "see things not present to the senses," or, in other words, to take a minimum of sensory data and from that build up a conception of the total situation of which the sensory data present is but a brief part. This is closely related to the requirement of the good driver that he see a bad traffic situation while it is actually developing, and be able to stay clear of it. Incidentally, if he can do this, he does not need a quick reaction time. He is safe not because he can get out of trouble by reacting quickly, but because he can visualize dangerous situations sufficiently in advance to keep out of them without the necessity of touching brake or throttle. Similar experience was encountered in the selection of pilots for the air force.

Manual Dexterity

3 Manual dexterity is also tested, to find the man's ability to make rapid movements of the arms, hands, and fingers. In addition to measuring accuracy, it is important to measure the speed with which he moves his hands in the various driving motions.

Eye-Hand Coordination

4 Eye-hand coordination is tested to discover how well a man can coordinate his eye and hand in a continuous task. Actually, this test represents a combination of the manual dexterity and visual perception tests mentioned above (1 & 3). Here they are put into one test because they have been found to be important jointly as well as separately. In terms of truck driving, this test relates to such activities as getting a vehicle accurately through heavy traffic.

It was found that a booklet of these tests would give some help in predicting which men were most likely to have accidents. The factors or characteristics measured by the tests, however, are not to be found one to the test. Instead, the factor of perceptual speed, for example,

(TURN TO PAGE 174, PLEASE)

Two more test instructions and examples, designed to register steadiness over an extended period and manual dexterity, are reproduced below. There is a time limit for each test controlled by supervisor with stop-watch

Test Number 6 – Steadiness

Instructions:

This is a test of your ability to make precise movements for an extended period of time.

Your task is to place a pencil dot in the middle of each "O" so that the dot does not touch the side of the letter. You are to work as rapidly and as accurately as you can.

Now go to lines A, B, C, D and E and practice to be sure you understand what you are expected to do.

(A) OOOOOOOOOOOOOOOOOOOOOOOOO
(B) OOOOOOOOOOOOOOOOOOOOOOOOO
(C) OOOOOOOOOOOOOOOOOOOOOOOOO
(D) OOOOOOOOOOOOOOOOOOOOOOOOO
(E) OOOOOOOOOOOOOOOOOOOOOOOOO

Test Number 7 – Manual Dexterity

Instructions:

This is a test of your ability to make rapid movements with your hands and fingers.

Your task is to make as many "gates" as you can in the time allowed. Accuracy is not important. However, you must have four vertical strokes and one diagonal stroke—that is—five strokes in all.

Below is a space for you to practice to be sure you know what you are to do. It makes no difference which way the diagonal runs: left to right or right to left.

(A) ⫽⫽⫽ ⫽⫽⫽ ⫽⫽⫽ ⫽⫽⫽ ⫽⫽⫽ ⫽⫽⫽ ⫽⫽⫽ ⫽⫽⫽ ⫽⫽⫽ ⫽⫽⫽
(B) ⫽⫽⫽ ⫽⫽⫽ ⫽⫽⫽ ⫽⫽⫽ ___ ___ ___ ___ ___ ___
(C) ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
(D) ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

FLEET OPERATORS' EXPERIENCE HANDBOOK

Methods Employed by Fleets for

SPOT REFINISHING

Sanding areas to be spot-finished, and soldering dents before repainting, is practice of majority; other practices include washing or steam cleaning areas and use of putty or plastic fillers. 80.89% fleets spray finish coat

Analysis by A. W. GREENE, Managing Editor, Commercial Car Journal

THE BEST PRACTICE of refinishing a truck body surface defect, based on methods employed by the majority of the nation's fleets, appears to be:

1. Sand the surface to be refinished.
2. Fill surface dents or breaks, if any, with solder.
3. Spray finishing coats.

In addition to such basic tools as hammers and files, the most widely used tools and equipment for this work are sanders, paint spraying equipment, acetylene torch and a power straightening hammer.

The facts determined from this study were obtained from a survey of spot refinishing methods employed by 230 fleets in all parts of the country; 13.04 per cent of these only do spot refinishing and touch-up work in their shops, 78.26 per cent not only do spot refinishing but are equipped for complete body refinishing work, as shown in Table 1.

Preparation

BECAUSE color matching is not the problem it is when spot refinishing non-commercial passenger cars, all fleets do not wash vehicles prior to preparation for spot finishing. However, a number of fleets follow this practice.

Only a few fleets seem to hammer out small dents, and then only if readily accessible. For large dents, the use of a power straightening hammer is growing.

Depending on the nature of the surface defect, the sanding operation varies from a light sanding for removing the polish, varnish or lacquer, to insure adherence of the finish coat, to sanding down to the base metal.

After the sanding operation, some fleets wash the area with a solvent, although the majority appear to wash down with hot or cold water and a detergent, as shown in Table 2. A slightly larger number prefer to steam-clean the area.

Majority of Fleets Equipped to Repaint Vehicles

Q. "To what extent do you repaint your vehicles?"

A. 78.26% fleets equipped for complete vehicle refinishing; 13.04% spot and touch-up only:

Table 1

FLEET SIZE GROUPS	Total Number of Fleets Reporting	Spot and Touch-up Only (Per Cent)	Repaint Completely (Per Cent)	Send Out All Repainting (Per Cent)
8 to 49 Trucks and Truck-Tractors	30	33.33	56.67	10.00
50 to 99 Trucks and Truck-Tractors	84	11.90	78.58	9.52
100 and Over Trucks and Truck-Tractors	116	8.62	83.62	7.76
Total and Average	230	13.04	78.26	8.70

This table breaks down fleets that do spot refinishing only, completely refinish their vehicles, and those that send out all repainting jobs, according to fleet size. It also shows that many small fleets find it profitable to maintain body refinishing facilities. A table showing a vocational breakdown of these fleets will be published in November issue

Filling Dents

SMALL dents and irregularities in the surface caused by hammering-out larger dents are filled with solder by 38.85 per cent of the reporting fleets, as shown in Table 3. Putty is used by 14.01 per cent of the fleets, and 23.57 per cent reported that they use both solder and putty for this work, depending upon the location of the dent, whether the surface being refinished is wood or metal, and whether or not there are any surface breaks in the area.

The column headed "Other," in Table 3, contains fleets that use fillers other than solder or putty. Too few to tabulate individually,

these fillers are mostly of the cold application type and range in consistency from fluids to pastes. In the same column also are fleets who say they do not use fillers but, rather, hammer out all dents smoothly, apply red lead or groundcoat, file and apply more red lead or groundcoat until smooth.

A large number of fleets clean the filled area, either by washing or by the use of some solvent, to insure good adherence of the finish coats.

Spot Refinishing Equipment

THE one tool that every fleet doing spot refinishing seems to have is a sander. Table 4 shows that 76.43 per cent of the reporting fleets have an electric type of sander and 28.03 per cent have the pneumatic type. These figures indicate that 4.46 per cent use both types for spot refinishing.

Paint spraying equipment is used by most fleets for spot refinishing. The balance apparently use either the brush-on or wipe-on types of finishes.

Acetylene torches are used by 73.25 per cent of the reporting fleets. Doubtlessly, the majority of these fleets use acetylene for metal surface repairs as well as for applying solder; 45.22 per cent of the fleets also report the use of electric welders for repairing surfaces to be refinished. Not shown in the table is the fact that about 10 per cent of the reporting fleets report having both types. Pneumatic straightening hammers are used by 37.58 per cent of the reporting fleets.

Next month's study will analyze methods employed by that group of these fleets that do complete refinishing.

How Fleets Clean Areas Requiring Spot Refinishing

Q. "How do you clean areas to be touched-up or spot painted?"

A. 77.71% fleets sand areas to be spot refinished; 35.67% steam clean; 31.21% wash, using either hot or cold water and detergent:

Table 2

VOCATIONAL GROUPS	Number of Fleets Reporting	Wash		Steam Clean	Sand
		Cold Water and Detergent (Per Cent)	Hot Water and Detergent (Per Cent)	(Per Cent)	(Per Cent)
COMMON CARRIER					
Local and Over-the-Road	25	20.00	12.00	52.00	76.00
FOOD DISTRIBUTION					
Bakeries, Dairies, Meats and Other Food Products	36	16.67	13.89	33.33	83.33
GOVERNMENT					
State, County, Municipal, Federal	49	16.33	20.41	32.65	65.30
CONSTRUCTION					
Builders, Quarries, Gravel	7	.....	14.29	57.14	71.44
INDUSTRIAL					
Local and Over-the-Road	3	.....	33.33	33.33	100.00
PETROLEUM					
Producers and Distributors	4	.....	.....	25.00	100.00
PUBLIC UTILITY					
Gas, Power, Water and Telephone	11	27.27	18.18	18.18	72.72
RETAIL DELIVERY					
(Other than Food) Dry Cleaning, Laundry, Newspaper, Coal and Ice, Department Stores, Beverage	12	8.33	16.67	25.00	100.00
TRUCK RENTAL	5	.....	.....	20.00	100.00
TRUCK AND BUS FLEETS, MIXED	5	20.00	20.00	60.00	100.00
Total and Average	157	15.29	15.92	35.67	77.71

How Fleets Fill Body Dents Prior to Spot Refinishing

Q. "After cleaning, how do you fill dents?"

A. 38.85% fleets use solder; 14.01% use putty; 23.57% use solder and putty, according to nature of dent:

Table 3

VOCATIONAL GROUPS	Number of Fleets Reporting	Solder (Per Cent)	Putty (Per Cent)	Solder and Putty as Needed (Per Cent)	Other (Per Cent)
COMMON CARRIER					
Local and Over-the-Road	25	48.00	20.00	20.00	16.00
FOOD DISTRIBUTION					
Bakeries, Dairies, Meats and Other Food Products	36	30.56	16.67	33.33	19.44
GOVERNMENT					
State, County, Municipal, Federal	49	46.94	6.12	14.29	32.65
CONSTRUCTION					
Builders, Quarries, Gravel	7	28.57	28.57	28.57	28.57
INDUSTRIAL					
Local and Over-the-Road	3	33.34	33.33	.....	33.33
PETROLEUM					
Producers and Distributors	4	25.00	25.00	.....	50.00
PUBLIC UTILITY					
Gas, Power, Water and Telephone	11	27.27	18.18	27.27	27.27
RETAIL DELIVERY					
(Other than Food) Dry Cleaning, Laundry, Newspaper, Coal and Ice, Department Stores, Beverage	12	33.34	8.33	33.33	25.00
TRUCK RENTAL	5	80.00	.....	20.00	40.00
TRUCK AND BUS FLEETS, MIXED	5	.....	20.00	60.00	20.00
Total and Average	157	38.85	14.01	23.57	26.11

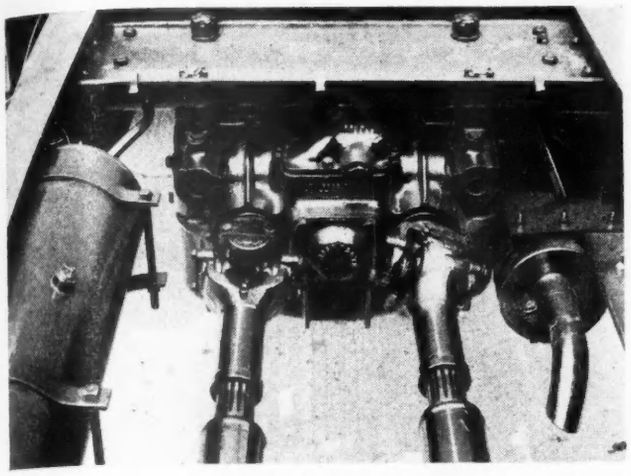
Type of Tools and Equipment Used for Spot Refinishing

Q. "Which of the following list of tools do you use for spot and touch-up work?"

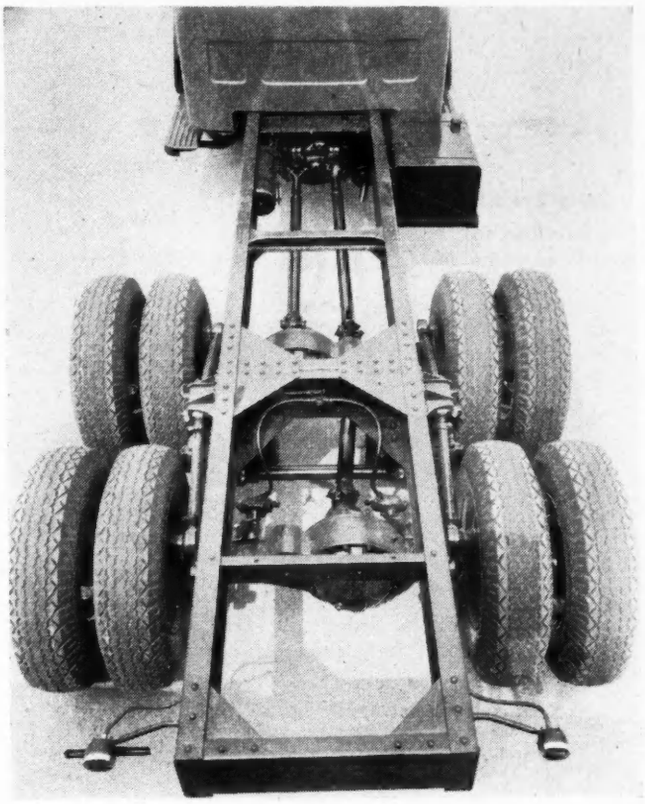
A. Almost every fleet uses a power sander, electric or pneumatic, 4.46% use both; 80.89% fleets use paint spraying equipment, 73.25% use acetylene torch, 45.22% electric welder, 18.47% use both; 37.58% fleets use pneumatic straightening hammer; 15.92% use solder sprayer:

Table 4

VOCATIONAL GROUPS	Number of Fleets Reporting	Sanders		Paint Spraying Equipment	Acetylene Torch	Electric Welder	Air-Operated Straightening Hammer	Solder Sprayer
		Electric (Per Cent)	Pneumatic (Per Cent)	(Per Cent)	(Per Cent)	(Per Cent)	(Per Cent)	(Per Cent)
COMMON CARRIER								
Local and Over-the-Road	25	84.00	44.00	92.00	88.00	56.00	40.00	8.00
FOOD DISTRIBUTION								
Bakeries, Dairies, Meats and Other Food Products	36	83.33	22.22	69.44	61.11	38.88	41.66	25.00
GOVERNMENT								
State, County, Municipal, Federal	49	59.18	22.45	77.55	69.39	34.69	28.57	16.33
CONSTRUCTION								
Builders, Quarries, Gravel	7	100.00	14.29	85.57	85.57	85.57	42.86	.....
INDUSTRIAL								
Local and Over-the-Road	3	100.00	33.33	66.67	66.67	66.67	.....	.....
PETROLEUM								
Producers and Distributors	4	100.00	25.00	100.00	75.00	25.00	.....	.....
PUBLIC UTILITY								
Gas, Power, Water and Telephone	11	90.91	27.27	90.91	63.64	36.36	45.45	18.18
RETAIL DELIVERY								
(Other than Food) Dry Cleaning, Laundry, Newspaper, Coal and Ice, Department Stores, Beverage	12	66.67	33.33	75.00	83.33	50.00	41.67	16.67
TRUCK RENTAL	5	100.00	20.00	100.00	100.00	80.00	40.00	20.00
TRUCK AND BUS FLEETS, MIXED	5	60.00	60.00	100.00	80.00	60.00	100.00	20.00
Total and Average	157	76.43	28.03	80.89	73.25	45.22	37.58	15.92



ABOVE Close-up of outlet end of torque divider showing twin shafts



RIGHT Plan view of chassis. Note how the forward axle provides center bearing rest for shaft to rear axle

New series features tandem-drive bogie with twin propeller shafts and 2-speed torque divider amidships

DODGE

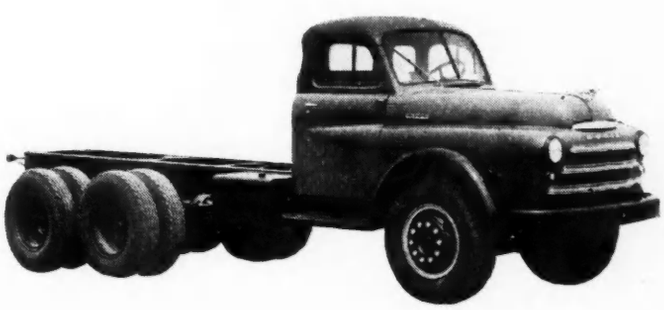
Offers New Six-Wheel Series

A NEW SIX-WHEEL series of motor trucks to be offered by Dodge Division, Chrysler Corp., the Dodge B-1-VX Model, was introduced recently featuring a tandem drive rear axle arrangement of unique type. Developed by Dodge truck special equipment engineers, the six-wheelers represent a rugged, heavy-duty tandem drive rear axle conversion for the familiar model "V" Dodge truck series for GVW ratings up to 34,000 lb.

Available in a range of three wheelbases, the line offers chassis dimensions shown in table.

As illustrated in the chassis plan view the tandem axles are mounted in a special bogie designed for heavy-duty service with torque rods arranged in parallelogram form to hold axles in correct alignment under all conditions. The illustration of the drive end shows the arrangement of the two propeller shaft lines running from the torque divider to each axle. It will be noted that the axle housings are offset to accommodate the

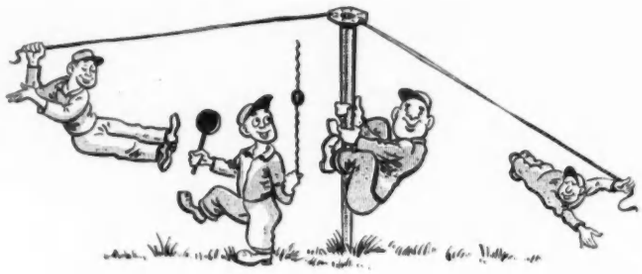
(TURN TO PAGE 182, PLEASE)



Condensed Six-Wheeler Specifications

Model	Maximum GVW (lb)	Body and Load Allowance (lb)	Wheelbase (in.)	CA (in.)	Overall Length (in.)	Body Length (ft)
B-1-VX 154	34,000	22,700	154	84	260⅜	12
B-1-VX 172	34,000	22,600	172	102	284½	14
B-1-VX 190	34,000	22,480	190	120	308½	16

DON'T PEEK
But solutions will be found on page 140

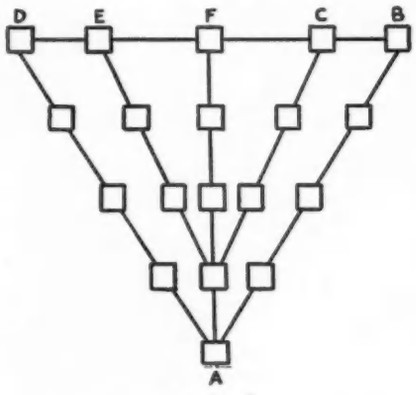


by
BORIS RANDOLPH

Time Out for PLAY

CHECK AND DOUBLE CHECK

19 trucks were parked nightly on a lot in the following triangular order:



When the night watchman came on duty he checked them, first by making sure that there were five on each side, and then by regularly patroling the lot in the following manner: He would count 5 from A to B, then walk to C and count 5 from C to A Then he would count 5 from A to D, and walk to E and count 5 back from E to A. Finally, he would count 5 from A to F. This, he felt, checked every bus on the lot.

One night, however, the attendant who parked the trucks decided to teach the night watchman a lesson. He had warned the man several times against the advisability of counting the trucks the way he did, but the watchman had paid no attention to him, feeling sure that his method was sound. Accordingly, when the watchman proceeded to check the trucks as usual on this night, he got the usual count of 5 in all the usual ways, but the attendant then proceeded to show him that instead of the usual 19 trucks on the lot, there were only 17.

How were the 17 trucks parked?

PARTS PAY OFF

To each of the letters on the left below add a word that answers to the definition and thereby form the name of a truck part. Example: G + a hearing device (EAR) = G-EAR:

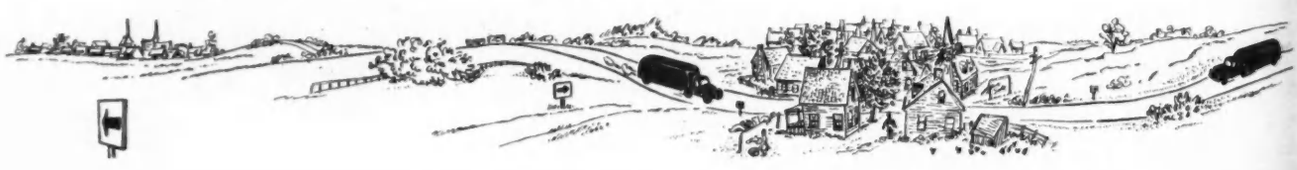
C + Having the power = ...
W + Part of a shoe = ...
T + To peruse = ...
B + A garden tool = ...
P + Recent = ...
F + A terminator = ...
T + Anger = ...
D + Alcoholic beverage = ...

HOW'S YOUR VERBAL RPM?

The RPM in each of the following words is obvious. Not so obvious is the rest of the word. Can you complete each word according to the definition on the left?

1. To scold R - P - - M - - -
2. Power beating instrument - R - P - - M - - -
3. A substitute R - P - - - - M - - -
4. A long cliff - - - - R P M - - -
5. Act of reimbursing R - P - - M - - -
6. A cell substance - R - - - P - - - M

A Matter of Timing



Every day at the same time, Tom, who always averages the same rate of speed, drives a truck from the western end of Oxville to the eastern end of Beeville. There he always meets Jim who always pulls in at the same time as he does, but from a different direction. Half an hour is then spent moving merchandise from Jim's truck to Tom's truck, after which Tom immediately drives back to Oxville.

One day, Jim, whose average speed is always 30 mph, arrives at the usual meeting place 40 minutes early and decides to go out to meet Tom who is still on his way in. When they meet they spend the usual half hour moving merchandise from one truck to the other, and then, as usual, Tom immediately heads back for Oxville where, upon arrival, he discovers that instead of taking the usual 4 hr for the round trip, he has taken, thanks to Jim's meeting him exactly 3½ hr.

Now the question is, how far is Beeville from Oxville?

(It's all doped out on page 140)

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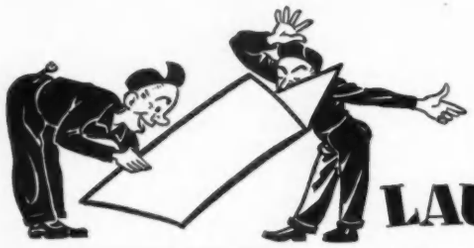
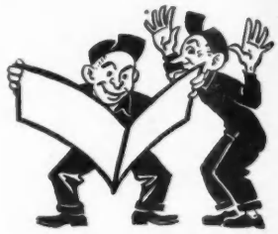


LAUGH IT OFF



The footsore hobo walked along the highway, thumbing his nose at the passing cars and transport trucks. Another hitchhiker watched the hobo's gesture in amazement.

"Hey, feller," cried the second hitchhiker, "if you're looking for a lift, why thumb your nose at our potential benefactors? You'll never get a ride that way."

The hobo shrugged. "Who cares?" he chirped. "This is my lunch hour."

CCJ

Pat: "I see by the papers that the Sing Sing football team has challenged the West Point team."

Mike: "Who do you think will win?"

Pat: "That's easy, me boy. The Pen is mightier than the Sword."

CCJ

Personnel Manager: "What was the nature of your work before you entered military service?"

Applicant: "Well, sir, I was a doer."

P. M.: "What in the world is a doer?"

Applicant: "Why, where I worked when the boss wanted something done he'd tell his secretary; the secretary would tell the head clerk; the head clerk would tell the bookkeeper; and the bookkeeper would tell me. There wasn't anybody for me to tell, so I was the doer."

CCJ

First Mechanic: "Do you act toward your wife as you did before you married her?"

Second Mechanic: "Exactly. I remember how I used to act when I first fell in love. I used to stand in front and look at her house, almost afraid to go in. Now I do the same thing some nights."

CCJ

Traffic Manager: "What are you scolding Jimmy for?"

Wife: "He was cutting out pictures of George Washington, and he was using my new scissors."

T. M.: "There is no harm in cutting out George Washington's picture and it certainly isn't going to hurt your scissors."

Wife: "Oh, I don't care so much for the scissors, but he was cutting Washington's picture out of dollar bills!"

CCJ

Junior: "Daddy, what's a sweater girl?"

Shop Foreman: "Why, er-uh, a girl who works in a sweater factory." And after a monment's pause, "Say, where did you get that question?"

Junior: "Never mind that Daddy—where did you get that answer?"

"Can you do double entry?" asked the employer of the prospective employe.

"I can do triple entry!" was the reply.

"Triple entry. How's that?"

"Well, it's one entry for the working partner showing the true profits, another for the sleeping partner showing small profits, and a third for the income tax collector showing a loss."

CCJ

SHE: "WHERE IS YOUR CHIVALRY?"
HE: "I TURNED IT IN FOR A BUICK."

CCJ

It was midnight. Mrs. Green awoke with a start. Someone was in the room.

"One move and you're deal! I'm looking for your husband's money!" said a rough voice.

"Wait a minute, hold your fire," said Mrs. Green. "I'll put on the light and hunt with you."

CCJ

Weavin' Willie, our city delivery driver, says that clothes make the man, but with a woman they just serve to show how she's been made.

CCJ

The rate clerk and his girl were driving down a moonlit country road.

He: "You look more beautiful every minute. Do you know what that's a sign of?

She: "Yeah, you're going to run out of gas."

CCJ

Lady: "Driver, does this bus go over Brooklyn Bridge?"

Driver: "If it doesn't lady, we'll all get a heck of a ducking."

Wifey: "You don't love me any more. All you do is smoke that nasty cigar and read the paper."

Maintenance Supt: "Don't be silly darling. I love you more than ever. I adore you. Now, shut up and let me finish reading."

CCJ

Joe: "Gosh, I need ten bucks somethin' awful, and I haven't the least idea who I can get it from."

Moe: "It's a good thing. For a minute I thought you were going to ask me for it."

CCJ

WIFE: "YOU SEEM DISAPPOINTED WITH YOUR PACKAGE."

WHITE COLLAR WORKER: "YES. I ANSWERED AN ADVERTISEMENT FOR A DEVICE TO KEEP GROCERY BILLS DOWN—AND THE FIRM SENT ME A PAPER WEIGHT."

CCJ

Salesman: "Boy, I want to see someone around here with a little authority."

Office Boy: "Well, I have about as little as anyone. What is it you want?"

CCJ

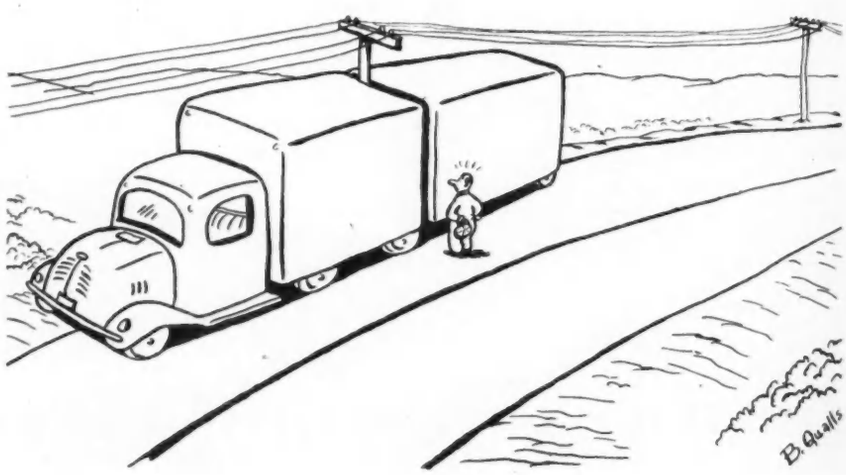
The O.S.&D. Clerk remarked primly to his lady love: "Nellie, I hope that you don't park with boys on lonely roads."

Nellie: "Not unless I'm driven to it."

CCJ

CATTY CORA, OUR OFFICE CUT-UP, SAYS THAT ONE MAN IN A THOUSAND IS A LEADER OF MEN; THE OTHERS FOLLOW WOMEN.

(Resume Work)



Steps enclosed inside the doors! Spine-saving new riding comfort!

Improvement after improvement spotlights the new 1949 Studebaker trucks!

EVERYWHERE you look, you see advancements in these 1949 Studebaker trucks that are new to you—and new to truck designing!

These husky, handsome, new Studebaker pace-setters have a dramatic new kind of styling to begin with! Sweeping streamlines from low front end all the way back!

New colors, too, as well as new contours—"new look" fenders flaired into a low-swung hood—a lower cab—a massive new grille—a rugged two-tone bumper!

No slippery running boards—the steps are enclosed! The wide doors have "hold-open" stops!

It would take pages of this publication to describe everything that's new and different in the revolutionary 1949 Studebaker trucks. Stop in and see them for yourself at a nearby dealer's.

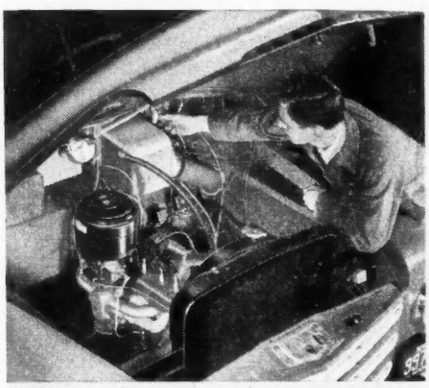
More truck models than Studebaker ever offered before! An extensive new range of sizes and wheelbases!

Cab equipment includes window wings, foot-operated ventilators, automatic cab light, ash tray—two arm rests, windshield wipers, sun visors. Studebaker's exclusive Truck Climatizer heating and defrosting system is available at extra cost.

STUDEBAKER TRUCKS

NOTED FOR LOW-COST OPERATION

©Studebaker Corp'n, South Bend 27, Indiana, U.S.A.



A new kind of lift-the-hood accessibility—No standing on a box to get at the engine and ignition! No fumbling under the dash panel to adjust instrument panel and accessory connections. The close-set fenders and wide-opening hood of the 1949 Studebaker trucks make it easy even for men of small stature to reach everything without strain.

DETROIT DISPATCH

Army Starts Phantom Orders . . . . Road Haulers Get More Business from Rails . . . . Oldsmobile's New V-8 has High-Compression Possibilities . . . . Potential Troubles for Union Terminals

by ***LEONARD WESTRATE***
CCJ Detroit News Editor

Phantom Orders

Army Ordnance soon will place "phantom" orders for trucks. This means that a certain number of trucks is ordered on a standby basis. The manufacturer makes plans to build them, but does nothing until the order is confirmed. This is known as Phase I, with Phase II being the actual construction after authorization by the military.

No Official Steel

It now seems improbable that truck trailer and truck body manufacturers will get into the charmed circle of industries receiving steel allocations. Industry observers believe, however, that the Office of Industry Cooperation and ODT will make informal requests to the steel industry that the trailer and bus manufacturers get consideration on supplies.

Except for Military

But truck manufacturers are not going to be required to furnish steel for military orders out of their own stockpiles after all. Previously, Section 8 of the proposed agreement between the steel industry and national defense establishment provided that steel could not be allocated to the manufacturers for military orders. By mutual agreement the disputed section has been dropped.

But Haulers Get Bigger Loads

R. C. Taylor, Jr., president of Trailmobile Co., reports a heavy increase in flat-bed trailer orders, indicating a shift to truck transportation from rails for steel hauling as a result of the recent Supreme Court decision outlawing basing point pricing. In that connection, the Senate Trade Policy Committee has asked ATA to make a study among its members on the effect, if any, of f.o.b. pricing decision on their business.

Morover the Commerce Department reports that motor trucks are steadily increasing their share of the nation's freight hauling business at the expense of the railroads. The report says that a fairly substantial diversion of competitive traffic from the railroad to trucks is indicated, especially in less than carload lots. The report says further that the truck has virtually taken over all local short haul commodity movements and is steadily increasing its share of longer intercity traffic.

New Olds H-C Engine

The new Oldsmobile V-8 valve-in-head engine develops 135 horsepower at 7.25 compression ratio. The engine is equipped with hydraulic valve lifters, which makes it extremely quiet, and has a new carburetor with side outlet. It is 10 inches shorter than the present in-line eight, and weighs only 30 lbs. more. Floats and jets are attached to the cover plate for easier servicing. Although the 7.25 compression ratio is not excitingly high (Kaiser-Frazer cars are 7.3) the engine is built so that the ratio can be stepped up by altering the head as better fuels become available. Basically, the engine is built for ratios up to 12½ to 1. It is understood that Olds will offer a 8 to 1 engine as optional to buyers in areas where 91 or better octane gasoline is available. It is reported that GM truck building divisions are very much interested in the high compression type engine, but they are saying very little about it at this time.

Oldsmobile will not have a 1949 60 series, which currently is its smallest line. The 1949 Olds line will consist of its 76 model with 6-cylinder engine; the 88, a new designation which will be practically the same as the 76 except for the new V-8 135 horsepower engine, and the 98 which also will use the V-8. The 76 and 88 will use the new "A" body which is to be used on Chevrolet and Pontiac next year.

Continental's Army Job

Truck manufacturers are reported to be showing considerable interest in the new aircooled engine developed by Continental Motors in cooperation with Army Ordnance (see page 86). Because of its low weight per horsepower and smaller size the engine is said to have distinct possibilities for truck use. Another interesting fact about it is that it has a torque curve developed for use with a torque converter. However, its use in commercial vehicles admittedly is a long way off. Little is known about the cost of the engine as yet, and it also might represent something of a noise problem. The army currently is using it in a vertical position in one of its trucks which certainly would be an advantage in building either a shorter vehicle or adapting more of the truck to payload space.

Flash Confusion

Apparently the problem of specifications for flashing lamps on commercial motor vehicles still is being tossed around by the AAMVA. At a committee meeting in Detroit recently it was evident that agreement still is a long way off. One of the problems is the question of whether or not flashing red signals should be confined exclusively to school buses. Another is the use of red lights to the front in flashing direction indicators.

Union Terminal Troubles

Not all truck operators give unqualified approval to the growing sentiment for union terminals at large urban centers. At such terminals, as the one currently being built in New York, the highway

(Turn to Page 78, Please)

"Hi dear—I just ran into the neatest little ranch house just off of route 41!"

THE SENSATION OF THE PISTON RING WORLD!

THE NEW MD-50 STEEL OIL RING—

the only ring with the Full-Flow Spring—

is the ring of the year!

Make old engines behave like new engines! Even in tapered and out-of-round bores this amazing new Sealed Power MD-50 Steel Oil Ring works efficiently. Ends oil waste! Increases power! Get Sealed Power "X" Ring Sets featuring the MD-50, the only ring with the Full-Flow Spring!

1. **Full-Flow Spring insures improved oil economy over a longer period.**
2. **Double ventilation in the Full-Flow Spring gives more spring action to steel segments—important in tapered and out-of-round bores.**
3. **Full-Flow Spring leaves all spacer slots and piston oil holes free and open.**
4. **Exclusive Full-Flow Spring design compensates for varying groove depth without loss of tension.**
5. **Full-Flow Spring provides greater bearing area on both piston and ring, assures longer ring life.**
6. **Full-Flow Spring retains original efficiency for entire life of ring.**

Only the new Sealed Power Full-Flow Spring gives you all these advantages. Available in Sealed Power "X" Sets featuring the MD-50 Steel Oil Ring—THE ONLY RING WITH THE FULL-FLOW SPRING! Sealed Power Corporation, Muskegon, Michigan. In Canada: Stratford, Ontario.

Piston Rings, Pistons, Cylinder Sleeves, Piston Pins, Valves, Water Pumps, Belts, Bushings, Tie Rods, Front End Parts

Sealed Power

PISTON RINGS

BEST IN NEW TRUCKS! BEST IN OLD TRUCKS!

Detroit Dispatch

(CONTINUED FROM PAGE 76)

units deliver loads to the terminals where they are separated by geographical location and delivered to designated zones by small trucks, avoiding the use of large semis in congested traffic. P. A. Smith, president of Smith Cartage Co. of Chicago, points out the danger to smaller operators where contracts for hauling from the terminal to zones is let out to one or only a few large concerns. He says that a monopoly on local hauling would arise if contracts were not carefully supervised.

Official Protest from AAA

From time to time mild criticism has been detected against the current styling in automobiles with their large areas of unprotected sheet metal. Now comes the American Automobile Association executive committee meeting in Colorado Springs, Colo., with an officially worded statement of protest. The committee said "It is apparent that car stylists and advertising have greatly influenced engineering staffs of motor car manufacturers. Trends in present day motor cars make it more necessary than ever before to replace large segments of car bodies as the result of damages from accidents. Further car design makes it difficult in many instances to handle mechanical repairs expeditiously. This, too, results in extra expense for the car owner."

Combine Sturdiness-Strength-Stamina with

Heavy-Duty HARDWARE

Rugged! Durable!! Adaptable!!!

HANSEN No. 111 Heavy-Duty Lock fits many needs. Nothing to assemble. No extras to buy. Ruggedly built for lasting service.

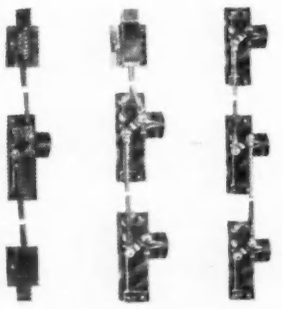
1 Outside handle and locking mechanism adaptable for right- or left-hand doors.

2 Lock may be used with center mechanism at either bottom or top, or both, if desired.

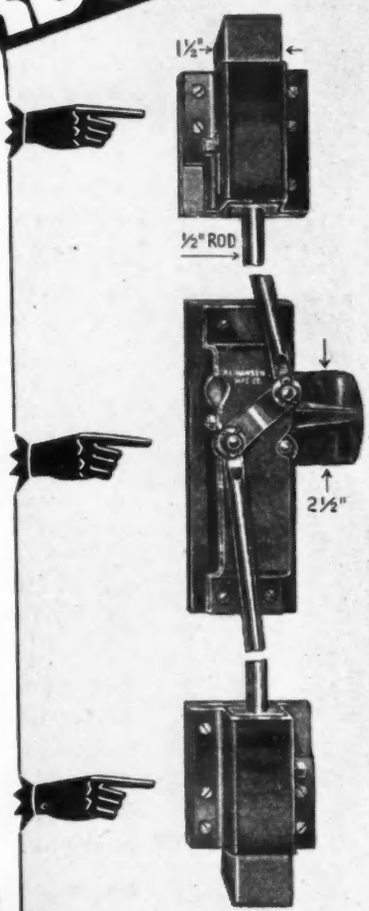
3 Bolts at top and bottom are 1½" wide. Center bolt is 2½" wide. Rods are ½" dia.

4 Locking bolts are held open or closed *under pressure!*

This lock meets a definite need among builders of vans, trailers, etc. *Request details.*



No. 111 Heavy-Duty Lock may be used in three different combinations as shown.



Hansen

HANSEN HARDWARE for Commercial Bodies

A. L. HANSEN MFG. CO.

5047 RAVENSWOOD AVE. CHICAGO 40, ILL.

T-P Tests Vitameter

Thompson Products Co. now is testing the market for its Vitameter alcohol-water-lead fuel injection system in Columbus, O. The unit (described in CCJ, January, 1948) automatically injects the mixture into the intake manifold when the engine is under load and has the effect of raising the octane number of the fuel several numbers giving greatly improved performance. It currently is being used by many truck fleets who report good results with it. The problem seems to be one of economics and public acceptance so far as passenger car use is concerned, rather than a problem of mechanical development. Several automobile and truck manufacturers are testing the device, but are absolutely opposed to saying what they think about it at the present.

Damage Against Union Upheld

New York State's Supreme Court has upset traditional labor law by confirming an award of more than $4000 against a teamsters union local for damages to a trucking firm during an unauthorized strike. The court upheld findings of the impartial chairman of the New York City trucking industry that a union may be held liable for the acts of its members and officials and that the local, even though the strike was called without official sanction, had participated in the overall strike situation and, therefore, shared responsibility.

Restricted Loading Ups Costs

With trucks being criticized on an increasing scale for congesting traffic while loading and unloading, the idea of restricted hours for these activities is being heard more often. One large operator says there is a real need for public education on that score. He points out that one reason for low haulage costs by trucks is the diminishing load principal. He points out that restricted hours on loading and unloading would seriously disrupt the schedules and cause an inevitable rise in truck rates. Another factor would be cost of overtime for drivers normally working from 8 to 5 if they were required to pick up or unload before or after those hours, which again would increase costs to the ultimate consumers.

Freight Handler: "What was that you said?"

Office Steno: "I said no man has ever been in my boudoir."

F. H.: "Your what?"

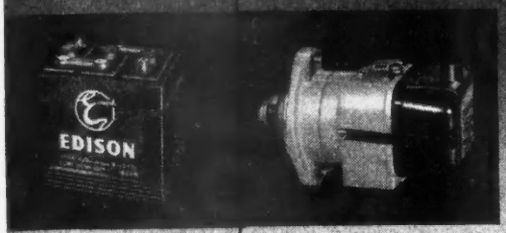
Steno: "Boudoir! Don't you know what a boudoir is? What do you sleep in?"

Freight Handler: "My underwear."

behind these great products...

a great
American scientist

- New, Quick-Cooling Aluminum Oxide Insulator with Wider Heat Range.
- Only an Edison has the Patented "SPUN-ON" Leakproof Gasket.



The New Edison "Extra Heavy Duty" Battery

The New Edison "AJ" Magneto

EDISON

Thomas A. Edison

Thomas A. Edison, Incorporated
Automotive Division
West Orange, New Jersey

You can always rely on an Edison

WASHINGTON RUNAROUND

New Minimum PM Manual for Federal Vehicles . . . ICC Develops Simplified Accident Reports. PRA Has New Traffic Control Manual . . . Brakes Head Accident Causes . . . Transport Report

by GENE HARDY
CCJ Washington Correspondent

Federal PM Manual

A preventive maintenance manual for government motor vehicles, prepared by the Interdepartmental Motor Equipment Committee, is rapidly nearing completion. Representing the first attempt at setting forth minimum preventive maintenance standards for government vehicles, the plan has resulted from many months of intensive work by committee members who have assembled existing standards, reconciled discrepancies, and made modifications and extensions from basic data.

While use of these standards by the various government establishments will be entirely optional, it is expected to end the wide variance in preventive maintenance systems which now exist throughout the government. It is also expected to reduce the confusion that results when vehicles of various agencies are brought into central equipment shops.

This preventive maintenance plan is closely linked with the committee's vehicle replacement program. Along these lines, the committee has just about completed its work on replacement standards for ¾-ton and smaller trucks and 1½-ton trucks. Replacement standards for all trucks are expected to be completed by the end of the year.

16,078 New Federal Vehicles

The Bureau of Federal Supply purchased 16,078 motor vehicles for the use of civilian agencies of government during the 12-month period ending June 30, 1948. Light duty trucks accounted for 5465 of the total or 33.99 per cent. Automobile purchases ranked second with 4844 vehicles, or 30.13 per cent. A complete breakdown follows:

	Number of vehicles	*Per cent by class*
Automobiles	4,844	30.13
Ambulances	40	0.25
Station Wagons	793	4.93
Carryalls	118	0.73
Light Duty Trucks	5,465	33.99
1-ton Trucks	217	1.35
1½-ton Stakes and Dumps	668	4.16
Other Stakes & Dumps	329	1.99
Misc. and over 1½-ton	2,133	13.26
Power Wagons	377	2.35
Jeeps	659	4.10
Buses	444	2.76
	16,078	100.00

Simplified Accident Reports

As this issue of COMMERCIAL CAR JOURNAL was sent to the printers the Interstate Commerce Commission was considering the issuance of two new accident report forms —one for truckers and the other for bus operators.

Simplification was the major objective of the group which drafted the new forms. It is also hoped that the new forms will be used by insurance companies and state public utilities groups so as to achieve uniformity in the reporting of accident data.

The new forms were developed by a panel appointed by the Advisory Council on Federal Reports (a non-governmental body which advises the Bureau of the Budget). Represented on the panel were government officials, insurance company officials, state government officials, members of safety organizations, and others interested in this work.

Petroleum Notes

Booming business in reclaimed lubricating oil has brought forth cries from the petroleum industry maintaining that this product should be taxed the same as new oil. Bureau of Internal Revenue ruling which exempts reclaimed oil from the 6c per gallon tax has helped to give "reclaimers" a substantial boost. Competition for crankcase drainings is keen and it is estimated that there may be as much as 25,000,000 gallons of reclaimed oil sold annually. Some state laws require the product to be labeled as such, a move backed by the petroleum industry. . . . Petroleum refineries had reached record-breaking rated operating capacities of 6,034,252 barrels of crude oil per day at the beginning of 1948, an increase of nearly 500,000 barrels daily compared with the previous year, according to the latest annual survey of the Bureau of Mines. . . . Shipments of motor fuel by pipeline continued to increase during the first half of 1948 and are almost 20 per cent higher than a year ago.

Trailer Ups and Downs

Production of truck-trailers during July amounted to 3429 units, according to the last report of the Bureau of the Census. This represented a 15 per cent drop from the 4047 units produced in June but was 15 per cent above the July, 1947 output of 2994 units.

Industry sources say the drop in production was due primarily to steel shortages. The truck-trailer industry, along with truck body builders, is now attempting to obtain a voluntary allocation of steel through the Office of Industry Cooperation.

Trailer shipments during July totaled 3765 units, as compared with 4113 units shipped during the previous month.

New Traffic Control Manual

A completely new edition of the Manual on Uniform Traffic Control Devices for Streets and Highways, prepared by the Joint Committee on Uniform Traffic Control Devices was released by the Public Roads Administration on September 16.

The manual is the generally recognized official national standard covering highway signs, pavement markings, traffic signals, islands, and similar devices used in the guidance, warning, and regulation of traffic.

The Joint Committee includes representatives of the American Association of State Highway Officials, the Institute of Traffic Engineers, and the National Conference on Street and Highway Safety (now the National Committee on Uniform Traffic Laws and Ordinances). Its members are outstanding traffic engineers of state and city highway departments, the Public Roads Administration, and numerous national organizations concerned with highway use and safety. The manual bears official approval of the three member organizations of the Joint Committee and also of the American Standards Association.

Thomas H. McDonald, Commissioner of Public Roads, has approved the manual as implementation of Section 12 of the Federal-aid Highway Act of 1944, which provides that signs, signals, and markings on roads and streets constructed with Federal aid shall be subject to approval of the state highway departments with concurrence of the Public Roads Administration. The law specifically directs the Commissioner of Public Roads to concur only in those installations that will promote the safe and efficient utilization of the highways.

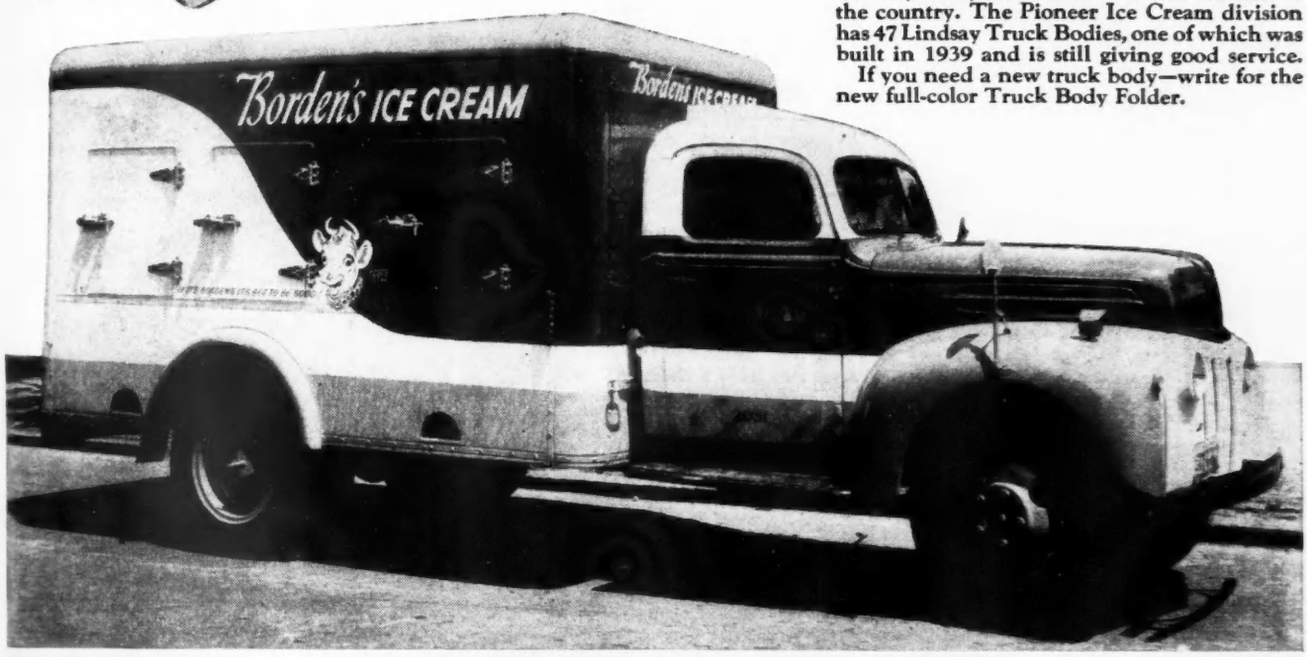
Superseding editions of 1935 and 1942, the new manual represents a four-year ef-

(TURN TO PAGE 82, PLEASE)

SEE WHAT AN IMPORTANT GAL I AM? BORDEN'S HAS PUT MY PICTURE ON THEIR NEW LINDSAY TRUCK BODIES

The Borden Company has a wide variety of styles and body types built by a number of Lindsay Body Builders in various sections of the country. The Pioneer Ice Cream division has 47 Lindsay Truck Bodies, one of which was built in 1939 and is still giving good service.

If you need a new truck body—write for the new full-color Truck Body Folder.



LINDSAY

The Lindsay Corporation 1724 25th Ave., Melrose Park, Ill. Sales Offices: Chicago, New York, San Francisco.

LS STRUCTURE

U. S. Patents 2017629, 2263510, 2263511
U. S. and Foreign Patents and Patents Pending

WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 80)

fort of the Joint Committee and its staff. While basic standards generally remain unchanged, many refinements and some significant revisions have been made.

The text has been entirely rewritten and expanded to provide a clearer, more complete exposition of each subject. Proper usage of traffic control devices is illustrated by 57 drawings and photographs. In addition, 85 signs are portrayed in the margins alongside the appropriate text.

Copies may be obtained from the Superintendent of Documents, Government Printing Office, at 50 cents each.

Brakes Head Accident Causes

An Interstate Commerce Commission analysis of mechanical defect accidents of motor carriers during 1947 reveals that brake defects are responsible for more accidents than any other type of defect. Tire failures are the second most frequent and result in the most property damage. While there has been an increase of all types of defects over the past two years, accidents due to defective engines, coupling devices, and wheels have been increasing more rapidly.

The main points emphasized in the analysis are: "(1) mechanical defect accidents are continually increasing; (2) as a percentage of all accidents, such accidents are decreasing; (3) compared with all accidents, mechanical defect accidents are almost twice as damaging to property but the casualty rates, both deaths and injuries, are approximately the same; (4) in general fashion, the same tyes of defects occur from year to year, with some variations due to outside influences such as availability of better tires after the war and increased production of trucks with consequent increase in coupling failures in drive-away operation; (5) stopped accidents', which constitute a fifth of all accidents, cause over half of the fatalities; (6) bus operators showed a material improvement last year in contrast with property carriers; and (7) most mechanical defect accidents are due to poor inspection and maintenance practices."

Industry Report on Transport

A steadily increasing share of the nation's commerce is being handled by motor truck, according to a recent report of the Department of Commerce. Contained in the quarterly issue of the Industry Report on Domestic Transportation, the study represents the most comprehensive appraisal of the motor trucking industry made in recent years, according to department officials. The report states that motor trucks are handling an expanding proportion of many types of traffic which formerly were hauled almost exclusively by other forms of transport.

The report contains extensive information on the organization and character of trucking operations, and indicates the nature and extent of increases in motor carrier rates during the past few years. Data showing the relative profitability of the trucking business are included.

Copies of the report may be obtained from the Transportation Division, Office of Domestic Commerce, Department of Commerce, Washington 25, D. C.

BIEDERMAN

The All-Star Truck

★ Advanced Design
★ Ready Accessibility of all Parts
★ Sturdy Construction
★ Dependable Power
★ Capacity for Big Loads

DEALERS: The Biederman National Standard Model, the peacetime successor to a long line of quality trucks since 1920, is a truck you cannot afford not to investigate. Nothing but the most sturdily constructed units by America's leading manufacturers are built into it. It's an All-Star team in itself. It has strength, durability, comfort for the long trip, easy accessibility of every part and modern design.

This is your opportunity to secure the Sales Franchise of a quality product. There is still some territory open. Write or wire us today for complete specifications.

BIEDERMAN MOTORS CORPORATION
CINCINNATI 14, OHIO

FWD Standardizes Models

In a move toward standardization of complete motorized units for all phases of power and communication line construction and maintenance work, The Four Wheel Drive Auto Co. has announced 38 coded units based on three FWD truck models. Basic models recommended by the company for use in line construction work are the HA for medium heavy duty service, the HR for heavy duty and the SU for the toughest of line work. All three models are available either with a standard type cab or a crew type cab

NEW SUPER PLUG GIVES SUPER SERVICE

EACH HASTINGS PLUG IS X-RAY INSPECTED FOR UNIFORM PERFORMANCE

It's no wonder the Hastings Aero-type Spark Plug is giving record performance in cars, trucks and tractors, wherever it's been introduced.

This new, different, vastly improved spark plug is X-ray tested for proper construction and heat flow. And it's built to finest aircraft standards—with the same type insulator perfected for superforts and fighter planes.

This proved construction lets you forget all common spark plug ailments—the Hastings Plug is far less subject to fouling and pre-ignition. And the Hastings exclusive system of Performance Rating greatly simplifies stocking and selection—only fifteen numbers cover all popular makes and models.

For better performance, longer life and trouble-free service—get Hastings.

DEPT. G, SPARK PLUG DIVISION • HASTINGS MANUFACTURING CO. • HASTINGS, MICHIGAN

$1.25

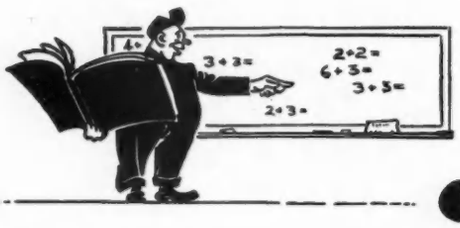
AND WORTH IT!

HASTINGS

Aero-type **SPARK PLUGS**

Featuring H. T. Aluminum Oxide Insulator

If Hastings Spark Plugs are not yet available in your territory, write direct for illustrated catalog. Distribution is being developed as rapidly as possible—your jobber will be able to supply you soon.



CCJ QUIZ

by G. W. BAHL

The wonders of the present "Atomic Age" dwarf all the marvels of past scientific progress—just as the development of commercial motor vehicles made antique the horse and wagon. To reach its current peak, however, numerous difficulties had to be solved, and we ask you to assume the role of an inventor and name the proper device or idea which was perfected to solve the following problems. 70 minus wins the dunce cap; 80 is average; 90 quite good and 100 tops in the contest.

1

Twenty-five years ago connecting rods had babbitted bearings and external oil lines to the pin bearings. A reduction of over 100% in cost could be made by

a. better type lubricating oil and new style pins.
b. rifle drilling and interchangeable bearing shells
c. new design oil filters
d. improved cooling system

2

Clutches improved from the early wet and dry multiple plate and the cone type to the single plate clutch for both medium duty and heavy duty vehicles. To prevent slipping and reduce the area-to-power ratio, a good solution would be

a. heavier springs
b. centrifugal boosters
c. metal-impregnated linings
d. stainless steel rivets

3

Increase in the amount of power to be handled along with speeds of engines and vehicles made desirable a propeller shaft with long life and infrequent servicing. The approved blue print shows

a. bronze bushed cross type universal joint
b. needle bearing joints
c. sliding block type universal joint
d. heavier torque tube

4

To facilitate brake adjusting the best approach would be to apply for a patent on a

a. torque wrench
b. slack adjuster
c. universal joint socket
d. woven-fabric lining

5

Improved acceleration, by insuring that all cylinders receive adequate fuel when the throttle is opened and vacuum in the manifold drops, is answered by

a. dual carburetor floats
b. accelerating pumps
c. aluminum jets
d. vented butterfly valves

6

Elimination of laborious shifting and constant mesh engagement has one simple answer

a. worm and spiral gears
b. helical gears
c. spur gears
d. bevel gears

7

While we are geared up on gears, what type would you work on for axles to incorporate uniform precision in manufacturing?

a. straight bevel
b. hypoid
c. herringbone
d. worm

8

Drivers of commercial motor vehicles also like comfort and one of the following should be designed for increased pay-load and operator comfort

a. elliptic leaf springs
b. rear "helper springs"
c. flat-pleated springs
d. rubber-cushioned spiral springs

9

Drivers were also pleased with a device for improving steering on slippery road. This is known as the

a. emergency valve
b. limiting valve
c. sander valve
d. two-way valve

10

To double the life of crankshafts, the midnight oil would be burned working out a process called

a. "sulfiding"
b. "induction hardening"
c. "chrome plating
d. "metallizing

ANSWERS

Line (b) for all 10 items.

JOBSERVATIONS

By Buster Rothman

You can't make footprints in the sands of time by sitting down.

* * *

It takes you to make a quarrel

* * *

Hotheads should remember that "anger" is one letter short of danger

* * *

People who use their beans seldom spill them

* * *

You can't leave well enough alone if you don't know well enough

* * *

A trap succeeds when it shuts up

* * *

The worst place in the world to live is just beyond your income

* * *

Time tells on a man—especially a good time

DRIVE SLOWGANS

By Buster Rothman

No one can gain in a race with a train.

* * *

Stop, Look and Live!

* * *

Wait a Minute—Your Life Is In It!

* * *

Figure the Loss Before You Cross.

* * *

No Guesses, No Messes!

* * *

There may be another; wait for it, Brother.

* * *

Slow-Down: Get the Low-Down.

* * *

Are Your Brakes Good to the Last Stop?

* * *

Drivers who check first—last.

Miles by the *Millions*

***EVERY MINUTE** of every day and night, trucks serve all America—hauling 'most everything we eat, wear and use. Despite rising costs and restrictive legislation, member companies of American Trucking Assns., Inc., perform these vital services dependably, economically and in accord with highest safety standards.*

The only motor trucks that come equipped with million-mile speedometers are Whites.

That could be a "stunt"—a bid for publicity. In the case of most trucks it would be. In the case of a White, it's a practical convenience.

For mileages in excess of a half-million are not uncommon for Whites. Many run 100,000 miles — the complete life-span of your ordinary speedometer — with no major overhaul.

Many owners of White Trucks have exact records to prove that after a total of miles fantastic by ordinary standards, their Super Power Whites continue to click them off as economically and dependably as the first mere hundred thousand.

The more miles a truck can travel, uninterruptedly, without costly repairs and replacements, the more economical it is. The better investment for every type of service.

Your local White Representative will gladly provide facts and figures in terms of your own business.

THE WHITE MOTOR COMPANY
Cleveland, Ohio, U. S. A.
THE WHITE MOTOR COMPANY OF CANADA LIMITED
Factory at Montreal

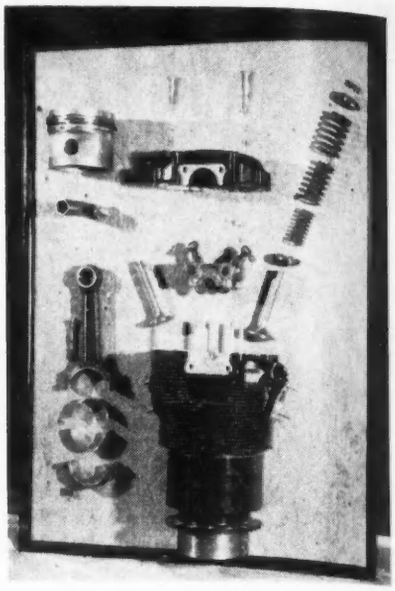
FOR MORE THAN 45 YEARS THE GREATEST NAME IN TRUCKS

Continental Air-Cooled Engines Save Space, Weight and Parts Stock

CONTINENTAL Motors Corp. has developed a line of heavy-duty air-cooled engines for a wide range of vehicles in military fields.

The six models in the new line range from 125 to 1040 hpr., and are designed to develop maximum power with minimum weight and minimum space requirements. Because they do not require radiators, water pumps and other cooling accessories found on liquid-cooled engines, they are said to achieve lightness and compactness which especially recommend them for use in military vehicles where payload and cargo space are of prime importance.

A feature of the new air-cooled engines is the fact that they use only two basic cylinders, of 4⅝ and 5¾-in. diameter, in each of which all parts are interchangeable. Differences in power are obtained by increasing the number of cylinders and by stepping up the compression ratio in the basic cylinder models. The engines with the smaller cylinder are built as 4, 6 and 8-cyl. horizontally-opposed models from 125 to 250 hpr., and with the larger cylinder, as a 6-cylinder horizontally-opposed and as 8 and 12-cylinder V-type models ranging from 375 to 1040 hpr. The larger models come with or without supercharger.



Exploded view of the interchangeable cylinder assembly used in the 4, 6 and 8 cylinder horizontally opposed, and 8 and 12 cylinder V-type engines

Simplicity of design and high interchangeability of parts make them suited for quick mass production, and facilitate their maintenance and repair. They will operate satisfactorily under extremes of temperature—at the Equator or the Pole.

Continental started work on the new engines five years ago, following a recommendation by the Ordnance-Industry Advisory Committee to the Ordnance Department that development of an air-cooled engine having a minimum of 650 hpr. be undertaken immediately. Following tests in which this engine operated 1000 hours under conditions where the army had difficulty obtaining 400 hours of operation during the war period, the program was expanded to provide a more complete range of combat engines on which the army could standardize for its ground vehicles.

One of the objectives in developing a broad line of air-cooled engines for ground vehicles, has been to make available for cargo vehicles engines having outstanding design features which until now have found their greatest usefulness in the aviation industry. As an example of the saving in engine weight which Continental has effected, the 250-hpr. air-cooled engine weighs only 777 lbs., as compared with 2400 lbs. for a liquid-cooled engine of

(TURN TO PAGE 107, PLEASE)

GUNITE
RIBBED • HEAVY DUTY
BRAKE DRUMS

THE REAL REASON FOR RIBS...

Brake drums in heavy duty service are subject to *severe flexing stresses* imposed by the pressures of of the shoes, tending to stretch the drum out of shape; and high temperatures, sometimes running to over 1000°. The characteristic ribs on GUNITE Brake Drums look like cooling fins but are not. Their purpose is (1) to stiffen the drum and hold it in shape against the shoe pressures, (2) to permit the use of thinner sections and thus reduce internal compressive and tensile stresses that produce "heat check", and (3) to permit axial expansion of the braking surface at high temperatures, further tending to prevent heat check and breakage. The GUNITE rib design was developed by hundreds of gruelling over-the-road tests and its effectiveness has been demonstrated by a thousand million miles of silent proof. *Buy RIBBED Gunites for heavy duty braking!*

Write for our new folder giving further information on the advantages of ribbed drums.

MADE BY
GUNITE FOUNDRIES
ROCKFORD, ILLINOIS

GUNITE CAST WHEEL ASSEMBLIES FOR TRAILERS AND TRUCKS INCLUDE FAMOUS GUNITE BRAKE DRUMS

The Conference Corner

(CONTINUED FROM PAGE 45)

"Every hydraulic system collects some solids due to entrance of dirt through the master cylinder, filler hole, abrasion of parts, etc. A small particle lodged under one of the seals may cause leakage initially or cause abrasion of bore and/or cup resulting in fluid leakage. The check valves in master cylinder also may become inoperative due to dirt on seat. The small by pass hole in the master cylinder (about .020 in. dia.) may also become plugged by dirt causing brakes to drag.

"By filtering the fluid through a fine mesh screen or cloth the foreign particles can be satisfactorily removed.

"No method is known for safely separating mineral oil from brake fluid. A good rule to follow is to throw away the fluid if rubber parts are found soft, swollen and deteriorated."

Fall Is Best Time to Change

by Arthur Hull-Ryde

Manager Automotive Sales
New York Air Brake Co.

"Hydraulic brake fluid should definitely be changed at least once a year. It would be desirable to change it more often but it is my belief that car owners and truck operators would not be willing to do this. Over a period of time evaporation takes place in the hydraulic system. This means that the fluid gradually attains a higher viscosity. This can be particularly dangerous during cold weather. Also over a certain period of time a certain amount of water enters the system. If this is allowed to remain it would result in rust or corrosion. It is my opinion that the best time to change hydraulic brake fluid is in the Fall of the year.

Periods Depend Upon Several Factors

by A. C. Pabst

Merchandising Dept.
Socony-Vacuum Oil Co.

"It is not possible to make a fixed rule regarding period change of hydraulic brake fluid. The life of a brake fluid will depend upon the quality of the fluid in the system and the severity or type of operating conditions to which it is subjected. The older type of brake fluids and even the poorer grades today contain volatile solvents which evaporate in service and cause the remainder of the fluid to become thick and gummy, resulting in sluggish brakes or sticking pedal.

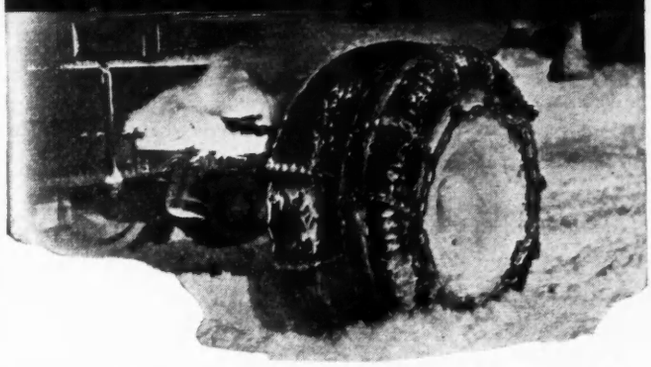
"Quality products are a non-volatile type and are not subject to evaporation and thickening. Consequently, they have a remarkably long life. Even these products, however, are subject to a very gradual deterioration of the corrosion inhibitor and a gradual accumulation of moisture through condensation. The best grade fluids are formulated to tolerate several percent of water but the condition can be reached where an excess of moisture may cause freeze-out and clogging at lower temperatures. Excess moisture can also cause serious corrosion.

"A safe recommendation, therefore, is to use only the best grade brake fluids—products that will pass SAE Specifications—and drain after one or two years' service, the actual time depending on the severity of operation of the individual fluid, the type of equipment and the climatic conditions.

END

(Please resume your reading on P. 46)

For greater safety... more mileage... specify CLEVELAND TIRE CHAINS!



WHEN roads are a sheet of ice . . . when mud or snow is deep, Cleveland Tire Chains guard the lives of your drivers and protect your trucks against damage.

Cleveland Sterling-Wearwell Chains are available in regular and extra heavy types (single and dual pneumatic) to fit every truck. Extra life . . . more positive traction . . . added service satisfaction are built into every link. Cleveland chains wear . . . and wear!

Due to steel shortages, the supply of tire chains will be drastically limited again this year. We suggest that you order now from your supplier. Or, if he is unable to serve you, we will be glad to have you write us relative to your requirements, so that we may try to aid you through our distributors. P&P-5049

Sterling Wear-Well
4-link spacing dual pneumatic truck chain

Sterling-Wearwell
dual pneumatic truck chain with triple side chain

Since 1869

CLEVELAND CHAIN

The Cleveland Chain & Mfg. Co.
Cleveland 5, Ohio

Associate Companies: David Round & Son, Cleveland 5, Ohio • The Bridgeport Chain & Mfg. Co., Bridgeport 1, Conn. • Seattle Chain & Mfg. Co., Seattle 8, Wash. • Round California Chain Co., So. San Francisco and Los Angeles 54, California Woodhouse Chain Works, Trenton 7, N. J.

1948 New Truck Registrations by Makes by States*

STATE		Auto-car	Brock-way	Chev-rolet	Dia-mond T	Divco	Dodge	Fed-eral	Ford	FWD	GMC	Inter-na-tional	Mack	Osh-kosh	Reo	Ster-ling	Stude-baker	Ward La France	White	Willys	All Others	Total
Alabama	July			657	1		129	1	465		107	165	7		18		87		6	93	9	1,756
	7 Mos.			4272	43	21	1186	27	3260		829	1473	95		160		468		96	890	24	12,844
Arizona	July	2		199		3	59	2	163		44	59	1		16		44		6	39	6	643
	7 Mos.	3		1020	6	14	366	9	784	2	237	292	7		62	5	228		35	193	22	3,285
Arkansas	July			538	17	1	137	2	579		127	166	5		43		75		7	210	1	1,908
	7 Mos.			4120	73	1	1149	25	3251	3	767	1274	41		234		470	1	63	1212	7	12,691
California	July	18		1203	34	25	561	7	1141	4	481	529	28		12	8	429		33	386	42	4,941
	7 Mos.	135	20	10457	238	272	5060	47	8302	18	3434	3818	193	6	145	69	2324		264	2220	352	37,374
Colorado	July			394	14		123	4	290		82	214	1		8		60		2	147	1	1,320
	7 Mos.	7		2036	86	27	715	38	1867	32	439	1217	15		59		326		39	687	7	7,597
Connecticut	July	7	7	187	10	11	73	4	205		81	92	18		7	6	57		6	68	6	840
	7 Mos.	52	56	1321	83	77	531	47	1115	10	338	659	117		47	8	304		68	434	29	5,296
Delaware	July	4	2	86	3	2	28		107		31	46					6		2	15	3	335
	7 Mos.	8	8	570	17	12	229	1	500		152	260	11		9		69		21	65	14	1,946
Dist. of Col.	July	2	1	92	7	19	41	2	121		24	47			5	1	21		5	36	1	425
	7 Mos.	9	4	587	31	85	231	19	588		209	326	30		31	1	73		16	127	7	2,374
Florida	July	1		551	6		171	2	440		106	170	16		6		101		24	249	9	1,852
	7 Mos.	19		3979	89	11	1235	46	2544	3	559	1094	104		89		493	2	113	916	109	11,405
Georgia	July			639	7		179	2	603		107	211	7		27		114		13	159		2,068
	7 Mos.	2	1	5638	215	5	1686	46	5008	2	1016	2370	164		242		804		152	1356	40	18,747
Idaho	July			269	11	2	72	3	191	1	56	114	6		17		68		4	142	3	959
	7 Mos.	1		1265	50	8	466	21	962	2	355	638	22		89		378	2	36	515	38	4,848
Illinois	July	13		1350	137	26	442	17	974	1	238	748	23		63		261		53	477	17	4,840
	7 Mos.	128	8	9871	746	300	3669	164	6119	9	1781	5570	282		530	6	1603	3	460	2406	210	33,865
Indiana	July		1	833	35	21	283	9	697	1	260	480	11		29		205		33	268	19	3,185
	7 Mos.	3	16	4555	187	130	1667	85	3405	5	1091	2689	76		200		975		253	1196	142	16,675
Iowa	July			857	62	1	270	4	746	2	147	592	21		56		136		54	167	1	3,118
	7 Mos.	1		4544	272	46	1566	20	3794	12	746	2659	76	3	231		717	2	151	1262	23	16,125
Kansas	July			641	22	6	143	6	458	1	93	245	1		25		107		6	131	7	1,892
	7 Mos.	1	2	5046	157	22	1280	111	3311	3	751	2015	18		212		690		76	738	33	14,466
Kentucky	July	2		516	39	1	112	10	489		133	220	7		41		79	1	5	174	9	1,838
	7 Mos.	9		3779	159	19	1091	110	2998		693	1602	58		265		440	6	79	1929	43	13,280
Louisiana	July			478	16	2	165	2	463	1	65	169	9		13		102		7	139	6	1,637
	7 Mos.	2		3085	71	18	968	12	2567	5	496	1148	52		70		456		76	739	59	9,824
Maine	July		3	202	1	3	37	1	165		47	97	7		10	2	38		2	35	1	651
	7 Mos.	1	14	1220	5	20	365	21	1053	1	339	598	45	1	87	4	233	1	16	270	14	4,388
Maryland	July	8	5	326	5	5	94	25	298		63	135	26		22	2	57		8	84	3	1,188
	7 Mos.	36	65	2654	37	46	838	59	1778	8	483	1038	125		101	5	312	3	80	393	23	8,064
Massachusetts	July	12	10	375	12	23	159	2	446		93	160	34	1	13	2	89		14	84	5	1,534
	7 Mos.	73	96	2699	124	266	1256	27	2853	11	674	1386	194	5	106	39	522	13	111	465	51	10,971
Michigan	July	1	2	916	17	23	408	22	1124		268	308	10		46		151		23	251	5	3,575
	7 Mos.	26	36	6818	137	268	3115	168	6449	6	1882	2136	104		315	1	907	5	270	1548	86	24,277
Minnesota	July	4		589	24	7	188	4	610	1	114	319	12		30		114		30	174	6	2,226
	7 Mos.	38		4143	178	56	1632	128	3661	25	770	2618	84	8	157	9	802	8	172	874	39	15,402
Mississippi	July			501	7		122	3	456		102	111	11		14		88		10	106	4	1,535
	7 Mos.			3592	43		895	18	2764		632	1042	80		117		372		48	748	17	10,368
Missouri	July	1	2	663	11	7	182	1	576		168	323	5		13		116	1	22	282	2	2,375
	7 Mos.	3	7	6178	150	126	1983	22	4562		1179	2517	69		134		698	1	197	1371	59	19,256
Montana	July			276	25		97	12	247		64	200	4		31		66		1	150	2	1,175
	7 Mos.	6		1510	78	7	584	49	1362	6	379	1049	16	1	129		343	5	38	760	23	6,345
Nebraska	July			442	75	1	184	7	332	1	93	329	7	1	14		102		11	183	1	1,783
	7 Mos.			2821	243	2	1016	25	2171	10	545	1795	60	1	60		502		87	974	24	10,336
Nevada	July			26			14		26		8	13	2				8		1	11		111
	7 Mos.		1	259	11	1	144	2	224	3	80	112	4		4		93		3	68	8	1,017
New Hampshire	July		1	90	2	3	18		70		17	27	2		1		8		1	21		251
	7 Mos.	5	10	535	12	18	230	4	490	1	116	208	29		22	1	87		12	144	11	1,933
New Jersey	July	15	20	448	25	35	132	14	390	1	182	211	54		9	2	106	1	28	156	12	1,841
	7 Mos.	134	261	3646	232	232	1363	96	2877	16	1288	1806	403		115	5	632	9	203	1031	88	14,437
New Mexico	July			385	17		93	7	219		105	131	5		5		57		12	38	5	1,079
	7 Mos.	1		1275	31	3	343	15	789	1	242	406	11		18		147		28	156	14	3,460
New York	July	43	96	1206	103	76	634	20	1061	10	436	620	192	1	68	4	261	7	77	464	32	5,411
	7 Mos.	365	728	8570	762	610	4965	363	6769	87	3113	5140	1284	49	560	38	1734	129	727	2613	329	38,935
North Carolina	July	6		1114	6	3	261	7	778	131	112	238	45		22	1	194		28	233	131	3,310
	7 Mos.	33	2	5446	62	38	1711	58	4086	135	567	1497	388		169	2	697		186	1266	197	16,520
North Dakota	July			262	20		43	9	237	2	33	225	8		12		30		2	78	2	963
	7 Mos.			938	54		377	35	904	5	156	856	22		49		232		17	288	2	3,935
Ohio	July	9		969	27	27	371	10	1072		268	564	27		42		206	1	82	221	17	3,913
	7 Mos.	66	16	8033	227	224	3288	165	6317	25	1919	4003	272		349	1	1235	3	637	1889	162	28,811
Oklahoma	July	2		594	6	3	147	2	553	11	94	311	5		24		74		13	188	2	2,029
	7 Mos.	3		3970	34	23	1185	23	3201	35	685	1931	34		171		456		104	963	32	12,650
Oregon	July	4		331	15	3	167	8	282	1	105	202	12		10	4	138		24	150	34	1,496
	7 Mos.	44	1	2379	68	14	1087	51	1715	6	798	1231	99		78	16	558		127	794	222	9,209
Pennsylvania	July	38	50	1080	75	7	456	34	1150	4	386	651	112		65	1	379		79	447	18	5,032
	7 Mos.	279	416	8714	454	96	4094	215	7406	10	2354	4542	764	25	444	35	1753	5	744	2498	178	35,323
Rhode Island	July	19		70	5	5	33	2	70		20	49	4		1		20		5	15	2	320
	7 Mos.	78	24	636	58	126	353	9	549		217	473	43	1	52	3	160		56	165	29	3,032
South Carolina	July			373	4		96	3	293		62	88	11		10		59		9	76		1,094
	7 Mos.	1		2802	31	1	822	13	1863		416	581	59		96		247		62	470	41	7,595
South Dakota	July			241	23		73	9	170		48	240	2		7		64		4	82	2	985
	7 Mos.			1021	102	3	480	39	912		251	1073	19		91		248		21	567	15	4,033
Tennessee	July			650	7		204	5	524		162	185	7		23		104		6	160	4	2,041
	7 Mos.	7	1	5574	145	27	1571	131	4236	2	1454	2364	165		227		715		206	1178	86	18,089
Texas	July	4		1518	36	23	648	5	1552	1	404	766	19		34		282		67	521	28	5,965
	7 Mos.	24	20	12975	259	105	4275	85	9989	6	2519	5494	220		338		1750	2	530	3212	198	41,999
Utah	July			143	6		48	2	83		33	53	5		2		38		5	37	3	481
	7 Mos.			931	62	15	380	16	760	6	281	460	27		25		201		33	279	31	3,587
Vermont	July		1	61	5		26	2	77		23	34	3		6		18		3	39	1	395
	7 Mos.	5	15	587	20	10	210	19	657	1	209	432	46	6	43	3	164	10	23	314	20	2,834
Virginia	July	1		594	8	12	136	11	629		116	178	6		14		97		12	184	8	2,009
	7 Mos.	21	15	4446	88	51	1350	78	3609	6	740	1402	70		134		539	2	151	921	67	13,086
Washington	July	6		508	19	17	227	1	498		170	305	21		25	4	167		15	139	22	2,144
	7 Mos.	17		2858	103	96	1245	22	2428	11	775	1513	86		105	16	626		83	700	107	10,791
West Virginia	July	4		281	7	4	95	16	282		89	94	13		21		54		19	197	3	1,179
	7 Mos.	17	38	1955	50	21	783	72	1536	5	630	686	117		98	1	273	6	115	947	40	7,386
Wisconsin	July	1		693	29	12	149	11	445	1	109	342	16		29	1	118		29	177	6	2,101
	7 Mos.	20		3956	189	87	1437	79	2873	44	730	2189	93	26	207	16	602	1	200	955	48	13,756
Wyoming	July			121	15	1	28	2	88		25	54			3		31		2	85	1	458
	7 Mos.	1		747	59	3	292	5	594	3	110	336	4		21		162	1	14	427	13	2,802
Total	July, 1948	227	201	25540	1058	420	8558	334	22935	175	6181	11830	848	3	1012	33	5286	11	910	7697	502	94,035
Total	July, 1947	386	381	13789	917	414	11608	548	17735	95	3479	9953	1034	30	980	76	3502	42	1148	5132	495	71,647
Total	7 Months, 1948	1684	1881	180033	6631	3663	66744	2940	141812	581	40703	82093	6374	132	7297	284	28820	220	7299	46133	3433	628,791
Total	7 Months, 1947	2802	2527	118603	5944	2768	76192	3298	120577	733	33979	64071	5832	150	8192	364	23980	331	7636	25789	3929	504,727

* Data from R. L. Polk & Co.

Truck Specifications Table

OF CURRENT PRODUCTION MODELS

DATA SUPPLIED BY MANUFACTURERS AND TABULATED BY

COMMERCIAL CAR JOURNAL

Key to Definitions, References and Abbreviations

DEFINITIONS

MAKE AND MODEL

Only Domestic Truck Models are listed.

OPTIONAL UNITS

For the express purpose of best fitting the truck to the individual job most of the models listed can be provided with optional engines, transmissions, axles, etc., and these models when so equipped are considered standard stock models.

CHASSIS LIST PRICE

The chassis list price applies to the minimum standard wheelbase with standard tires and standard equipment. All prices are F.O.B. factory. Chassis list price does not include the price of the Cab unless otherwise noted.

RECOMMENDED GROSS VEHICLE WEIGHT FOR NORMAL SERVICE

The Gross Weights published herewith are those supplied by manufacturers as their Recommended Gross Vehicle Weights for Normal Operating Conditions, and are based upon the Maximum Authorized Tire Size listed. In actual practice the manufacturer may either increase or decrease the gross vehicle weight rating when either favorable or unfavorable operating conditions are involved. Since the proper performance of a motor truck depends upon many factors, including grades, road conditions, etc., the gross weights that a manufacturer is prepared to recommend will vary with particular conditions, and the manufacturer's own standard of safety factors. Specific recommendations, therefore, should be obtained from the manufacturer's representative.

CHASSIS WEIGHT

The chassis weight listed includes the weight of the minimum standard wheelbase chassis, with cowl, with standard tires, with standard equipment, with crankcase and cooling system full, and 5 gallons of fuel in the tank. It does not include the weight of the Cab. This applies to C.O.E. as well as conventional chassis types. Exceptions are noted.

STANDARD TIRE SIZE

The standard tire size listed is that which is included in the Chassis List Price.

MAXIMUM AUTHORIZED TIRE SIZE

The tire size listed in this column is the maximum size recommended by the manufacturer of the chassis for the Gross Vehicle Weight for Normal Operating Conditions. It is furnished at extra cost, if it differs from the standard size. Dual rears are understood; exceptions noted.

MINIMUM STANDARD WHEELBASE

The minimum standard wheelbase is the so-called standard wheelbase on which the Chassis List Price is based.

MAXIMUM STANDARD WHEELBASE

The maximum standard wheelbase is the extreme end of the standard range of wheelbases offered by the chassis maker.

MAXIMUM BRAKE HP.

Maximum Brake Horsepower at Given R.P.M. is actual dynamometer reading without accessories.

GEAR RATIO RANGE

Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptions are noted.

TRACTORS

Unless given the designation (N)—meaning not available as a tractor—all standard models may be assumed to be available as tractors. Exclusively Tractor models are designated (T).

KEY TO REFERENCES

c.f.—Cab Forward design.
c.o.e.—Cab-Over-Engine design.
(D)—Diesel-engine equipped.
(T)—Designed for tractor use only.
(C)—Converted Ford or Chevrolet Model.

(2) International Harvester—Specifications shown represent only the basic standard chassis units and standard chassis ratings in keeping with definitions established by Commercial Car Journal. Optional units not shown such as engines, clutches, transmissions, axles or axle ratios, brakes, wheels and tires, frames or frame reinforcements, optional wheelbases or any other units which make up part of the truck chassis and which International will furnish and approve from the factory as optional equipment can or will change either the ratings, chassis weight shown or performance of the truck as indicated by this list.

Also the company reserves the privileges of assigning special gross vehicle ratings for any chassis providing in the opinion of its engineering department, the type of service justifies the new rating without decreasing the safety factor designed into the truck.

(a)—Available with Two-Speed Axle designated KBS Models.

KEY TO ABBREVIATIONS

MAKES—ALL

B—Bendix
BL—Brown-Lipe.
Bu or Bud—Buda.
BW—Bendix-Westinghouse
C—Chevrolet.
Cl or Cla—Clark.
Con—Continental.
Cum—Cummins-Diesel.
Eat—Eaton.
F—Ford.
Fu—Fuller.
H—Hotchkiss.
Her—Hercules.
L—Lockheed.
LH—Lockheed front, Wagner "hi-Tork" rear.
LW—Lockheed front, Wisconsin rear.
M—Midland.
N.P.—New Process.
O or Ow—Own.
Op or Opt—Optional.
Shu—Shuler.
Spi—Spicer
T or Tim—Timken.
Tw—Timken-Westinghouse
TW—Timken-Wisconsin.
WG—Warner Gear.
Wau—Waukesha.
W or Wis—Wisconsin.
Wg—Wagner.
Ws—Westinghouse.
WW—Westinghouse or Wagner

WHEELS DRIVEN

2F—Forward unit of Rear Axle Group.
2R—Rear Unit of Rear Axle Group
4R—Forward and rear units of Rear Axle Group.
4—All wheels.

BRAKES—SERVICE

Location

4—Four Wheels, front and rear.
4r—Four Wheels, rear only.

Type

I—Internal.
X—External.

Operation

A—Air.
H—Hydraulic.
V—Vacuum.
D or Dp—Dual Primary

BRAKES—HAND

Location

C—Center of double propeller shaft.
2—Rear wheels.
4—Four wheels.
6—Six wheels.
P—Back of Power Divider.
J—Jackshaft.
T—Transmission.
F—Driveshaft.

Type

D—Tru-Stop disk.
I—Internal.
M—Mechanical.
X—External.
PD—Two drums on rear of power divider.

BRAKE DRUMS

Material

a—Cast alloy iron.
A—American Car Foundry.
c—Cast iron.
Cc—Composite Front, Cast Iron in rear.
Ce—Centrifuse.
Cl—Copper iron.
Co—Composite.
D—Dayton.
E—Ermalite.
G—Gunite.
N—Nickel iron.
S—Steel.

(Where a combination of any of the above is used, the first reference mark applies to the front and the second to the rear drums.)

FRAME

Type

C—Channel.
T—Channel tapered front and rear.
L—Channel reinforced with liner.
B—Channel reinforced with both liner and fishplate.
P—Channel reinforced with plate.
TL—Channel tapered front and rear reinforced with liner.
D—Drop Center
Tf—Tapered front.
A—Straight section sidemembers, lined with oak inserts.
Z—Reinforced (X) member frame, box type sections.

REAR AXLE

Final Drive and Type

B—Bevel.
CD—Chain Drive
F—Full-floating.
H or Hy—Hypoid.
d—Dual range axle.
2—Double Reduction.
S—Spiral bevel.
W—Worm.
¾—Three Quarters Floating.
½—Semi-Floating
T—Torque Tube

GEAR RATIOS

(**) Only one ratio.

Drive and Torque

H—Hotchkiss (springs).
R—Radius Rods.
L—Parallel Torque Rods
T—Torque Arm.

GOVERNOR STANDARD

Y—Yes.
N—No.

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(Continued from Page 93)

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter, Length	Governor Standard	TRANSMISSION: Make and Model	TRANSMISSION: Forward Sp'ds	REAR AXLE: Make and Model	REAR AXLE: Gear and Type	REAR AXLE: Drive & Torque	REAR AXLE: Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operat'n	BRAKES SERVICE: Lining Area	BRAKES SERVICE: Drum Area	BRAKES SERVICE: Drum Material	BRAKES SERVICE: Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions	FRAME: Type
	Available																														
1	(c.o.e.)....200				15000	5500●	7.00/20D	8.25/20	Wau BM	6–3 5/16x4 1/4	263	5.9	178	78–2800	7–2 5/16x10 1/4	N	WG T9	4	Tim E100DPH	HF	H	** –6.20	Tim 32502H	L4IHV	314	534	a	TX	.....	10x3x 1/4	T
2	(c.o.e.)....225				16500	6200●	7.50/20D	8.25/20	Wau BZ	6–4x4 1/4	320	5.9	235	105–3200	7–2 5/16x10 1/4	N	WG T97	4	Tim E100DPH	HF	H	** –6.20	Tim 32502H	L4IHV	314	534	a	TX	.....	10x3x 1/4	T
3	(c.o.e.)....250				20000	6400●	8.25/20D	9.00/20	Wau BZ	6–4x4 1/4	320	5.9	235	105–3200	7–2 5/16x10 1/4	N	Fu 5A330	5	Tim H100DPH	HF	R	** –6.83	Tim 32502H	L4IHV	344	584	a	TX	.....	10x3x 1/4	T
4	(c.o.e.)....400				22000	6800●	9.00/20D	10.00/20	Wau BZ	6–4x4 1/4	320	5.9	235	105–3200	7–2 5/16x10 1/4	N	Fu 5A330	5	Tim L100DPH	HF	R	** –6.83	Tim 35000H	L4IHV	370	642	a	TX	.....	12x3x 1/4	T
5	(c.o.e.)....500				23000	7500●	9.00/20D	10.00/20	Wau MZA	6–4 1/4x4 1/4	404	5.6	285	130–3000	7–2 5/16x12 1/2	Y	Fu 5F430	5	Tim Q100DPH	HF	R	** –7.80	Tim 26452H	L4IHV	458	846	a	TX	.....	12x3x 1/4	T
6	(c.o.e.)....550				28000	8100●	10.00/20D	11.00/20	Wau MZA	6–4 1/4x4 1/4	404	5.6	285	130–3000	7–2 5/16x12 1/2	Y	Fu 5F430	5	Tim S200DPH	2F	R	** –7.84	Tim 26452H	L4IHV	576	1054	a	FL	.....	14x3x ☆	T
7	(c.o.e.)..550 X				32000	9600●	10.00/20D	11.00 24	Wau MZA	6–4 1/4x4 1/4	404	5.6	285	130–3000	7–2 5/16x12 1/2	Y	Fu 5F430	5	Tim R100P	HF	R	** –7.40	Tim 26452TW	L4IA	566	950	a	FD	.....	14x3x ☆	T
8	(c.o.e.)....600				28000	10000●	10.00/20D	11.00/24	Wau 140 GK	6–4 1/2x5 1/2	525	6.4	425	172–2600	7–3 1/4x13 3/8	Y	Fu 5A650	5	Tim R100P	HF	R	** –7.40	Tim 26452TW	L4IA	566	950	a	FD	.....	14x3x ☆	T
9	(c.o.e.)....601				28000	10900●	10.00/20D	11.00/24	Wau 145 GK	6–5 1/4x6	779	6.2	595	240–2400	7–3 1/2x17 3/4	Y	Spl 7851	4	Tim R100P	HF	R	** –7.40	Tim 26452TW	L4IA	566	950	a	FD	.....	14x3x ☆	T
10	(D) (c.o.e.)....602				28000	11200●	10.00/20D	11.00/24	Cum HB600	6–4 7/8x6	672	17.5	500	150–1800	7–4 1/2x16 1/2	Y	Spl 7851	4	Tim R100P	HF	R	** –7.40	Tim 26452TW	L4IA	566	950	a	FD	.....	14x3x ☆	T
11	Biederman...NSH	.....	130	190	21000	6070	8.25/20D	10.00/20	Her JXLD	6–4x4 1/2	339	6.9	272	131–3200	7–2 1/2x10 3/4	N	Fu 5A330	5	TimH700DPH	SF	H	** –7.2	Tim 35000HX	LH4IH	514	744	G	T	60	9x3x1/4	C
12	.....N8D	.....	130	190	21000	6070	8.25/20D	10.00/20	Her JXLD	6–4x4 1/2	339	6.9	272	131–3200	7–2 1/2x10 3/4	N	Fu 5A330	5	TimH700DPH	2D	H	6.13–8.15	Tim 35000HX	LH4IH	514	744	G	T	60	9x3x1/4	C
13	Chevrolet.....FP	835	116	....	4600	▼2590	6.00/16S	158	O-Thrift Mas.	6–3 1/2x3 3/4	216	6.5	174	90–3300	4– ♦ ♦	N	Own	3	Own	Hy	T	** –4.11	Own	O4IH	159	242	Co	2I	39	5 3/4x2 1/4x ☆	C
14	.....FR	945	125	....	♦5800	▼2935	158	7.00/17S	O-Thrift Mas.	6–3 1/2x3 3/4	216	6.5	174	90–3300	4– ♦ ♦	N	Own	3	Own	HyF	H	** –4.57	Own	O4IH	178	272	Co	2I	48 1/4	5 1/2 x2 1/4 x ☆	C
15	† Fwd. Control..FT	1035	125	....	♦7000	2675	158	7.00/17S	O-Thrift Mas.	6–3 1/2x3 3/4	216	6.5	172	90–3300	4– ♦ ♦	N	Own	4	Own	HyF	H	** –5.14	Own	O4IH	243	371	Co	2I	60	7x2 3/4 x ☆	C
16	.....FS	1025	137	....	8 00	▼3170	7.00/17S	7.00/18	O-Thrift Mas.	6–3 1/2x3 3/4	216	6.5	174	90–3300	4– ♦ ♦	N	Own	4	Own	HyF	H	** –5.14	Own	O4IH	248	302	Co	2I	....	7x2 3/4 x ☆	C
17	† Fwd. Control..FU	1125	137	....	10000	2880	7.00/17S	7.00/18	O-Thrift Mas.	6–3 1/2x3 3/4	216	6.5	172	90–3300	4– ♦ ♦	N	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	60	7x2 3/4 x ☆	C
18	.....RJ	1100	137	....	12 00	▼3 20	7.00/20S	7.50/20	O-Thrift Mas. ::	6–3 1/2x3 3/4	216	6.5	174	90–3300	4– ♦ ♦	N	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	84	8 1/4 x2 1/2 x 1/4	C
19	.....RK	1135	161	....	13 00	▼3740	7.00/20S	7.50/20	O-Thrift Mas. ::	6–3 1/2x3 3/4	216	6.5	174	90–3300	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	....	8 1/4 x2 1/2 x 1/4	C
20	(School bus) .RL	1280	161	....	12000	▼4120	6.50/20D	7.00/20	O-Load Mas.	6–3 1/2x3 3/4	216	6.5	174	90–3300	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	60	8 1/4 x2 1/2 x 1/4	C
21	.....RVS	1470	137	....	15000	▼4230	7.50/20D	9.00/20▲▼	O-Load Mas.	6–3 7/8x3 7/8	235	6.6	192	93–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	84	8 1/4 x2 1/2 x 1/4	C
22	.....RWS	1505	161	....	15000	▼4290	7.50/20D	9.00/20▲▼	O-Load Mas.	6–3 7/8x3 7/8	235	6.6	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	60 1/8	8 1/4 x2 1/2 x 1/4	C
23	(c.o.e.)....RPS	●1825	110	....	15000	▼4755	7.50/20D	9.00/20▲▼	O-Load Mas.	6–3 7/8x3 7/8	235	6.6	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	84 1/8	8 1/4 x2 1/2 x 1/4	C
24	(c.o.e.)....RRS	●1860	134	....	15000	▼4805	7.50/20D	9.00/20▲▼	O-Load Mas.	6–3 7/8x3 7/8	235	6.6	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	108 1/8	8 1/4 x2 1/2 x 1/4	C
25	(c.o.e.)....RSS	●1895	158	....	15000	▼4900	7.50/20D	9.00/20▲▼	O-Load Mas.	6–3 7/8x3 7/8	235	6.6	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	60 1/8	8 1/4 x2 1/2 x 1/4	C
26	(c.o.e.)....RP	●1825	110	....	16000	▼4755	7.50/20D	9.00/20▼	O-Load Mas.	6–3 7/8x3 7/8	235	6.6	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	84 1/8	8 1/4 x2 1/2 x 1/4	C
27	(c.o.e.)....RR	●1860	134	....	16000	▼4805	7.50/20D	9.00/20▼	O-Load Mas.	6–3 7/8x3 7/8	235	6.6	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	108 1/8	8 1/4 x2 1/2 x 1/4	C
28	(c.o.e.)....RS	●1895	158	....	16000	▼4900	7.50/20D	9.00/20▼	O-Load Mas.	6–3 7/8x3 7/8	235	6.6	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	60	8 1/4 x2 1/2 x 1/4	C
29	.....RV	1470	137	....	16000	▼4230	7.50/20D	9.00/20▼	O-Load Mas.	6–3 7/8x3 7/8	235	6.6	192	93–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	84	8 1/4 x2 1/2 x 1/4	C
30	.....RW	1505	161	....	16000	▼4290	7.50/20D	9.00/20▼	O-Load Mas.	6–3 7/8x3 7/8	235	6.6	192	93–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	....	8 1/4 x2 1/2 x 1/4	C
31	(School bus) .RX	1550	199	....	15000	▼4715	7.50/20D	8.25/20	O-Load Mas.	6–3 7/8x3 7/8	235	6.6	192	93–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	....	8 1/4 x2 1/2 x 1/4	C
32	Corbitt■.....18BG	.....	181	....	18000	.....	9.00/20	10.00/20	Con M6330	6–4x4 1/2	330	6.1	246	104–2800	7–2 5/16x12	Y	Cla 205V	5	TimH100DPH	....	H	**–5.29	Tim 32502H	B4IHV	.....	.....	a	TX	.....	8x3 1/4 x 1/4	T
33	.....22BG	.....	190	....	22000	.....	10.00/20	10.00/22	Con B6371	6–4 1/8x4 5/8	371	6.0	280	100–2600	7–2 5/8x13 1/2	Y	Fu 5A43	5	Tim L100DPH	....	H	**–5.29	Tim 35000H	B4IHV	.....	.....	a	TX	.....	8x3 1/4 x 1/4	T
34	.....25BG	.....	200	....	25000	.....	10.00/22	11.00/22	Con B6427	6–4 1/8x4 5/8	427	5.9	325	127–2600	7–2 5/8x13 1/2	Y	Fu 5A43	5	Tim Q100P	....	H	**–6.17	Tim 35100TW	Ws4IA	.....	.....	a	TX	.....	8 1/4 x3 1/4 x ☆	T
35	.....18TG	.....	137	....	18000	.....	9.00/20	10.00/20	Con M6330	6–4x4 5/8	330	6.1	246	104–2800	7–2 5/16x12	Y	Cla 205V	5	Tim H100P‡‡	....	H	**–5.29	Tim 32505TW	Ws4IA	.....	.....	a	TX	.....	7 1/8 x3 1/4 x ☆	T
36	(T)....H18TG	.....	137	....	20000	.....	10.00/20	10.00/22	Con M6330	6–4x4 5/8	330	6.1	246	104–2800	7–2 5/16x12	Y	Fu 5A43	5	Tim L100P‡‡	....	H	**–5.29	Tim 32505TW	Ws4IA	.....	.....	a	TX	.....	7 1/8 x3 1/4 x ☆	T
37	(T).....22TG	.....	144	....	22000	.....	10.00/22	10.00/22	Con B6427	6–4 1/8x4 7/8	427	5.9	325	127–2600	7–2 5/8x13 1/2	Y	Fu 5A43	5	Tim Q100P‡‡	....	H	**–5.29	Tim 35000TW	Ws4IA	.....	.....	a	TX	.....	8x3 1/4 x 1/4	T
38	(T).....H22TG	.....	144	....	24000	.....	10.00/22	11.00/22	Con B6427	6–4 1/8x4 7/8	427	5.9	325	127–2600	7–2 5/8x13 1/2	Y	Fu 5A43	5	Tim L100P‡‡	....	H	**–5.29	Tim 35000TW	Ws4IA	.....	.....	a	TX	.....	8x3 1/4 x 1/4	T
39	(T).....25TG	.....	148	....	25000	.....	10.00/22	11.00/22	Con R6513	6–4 1/2x5 1/8	513	5.9	400	170–2600	7–3 1/4 x—	Y	Spl 6253	5	Tim Q100P‡‡	....	H	**–6.17	Tim 35100TW	Ws4IA	.....	.....	a	2	.....	8 1/4 x3 1/4 x ☆	T
40	(T).....H25TG	.....	148	....	25000	.....	10.00/22	11.00/24	Con R6513	6–4 1/2x5 1/8	513	5.9	400	170–2600	7–3 1/4 x—	Y	Spl 6253	5	Tim L100P‡‡	....	H	**–6.17	Tim 35100TW	Ws4IA	.....	.....	a	2	.....	8 1/4 x3 1/4 x ☆	T
41	(T).....28TG	.....	147	....	28000	.....	10.00/22	11.00/24	Con R6602	6–4 1/2x5 1/8	602	5.9	484	199–2600	7–3 1/4 x—	Y	Fu 5A650	5	Tim R100P‡‡	....	H	**–6.42	Tim 26450TW	Ws4IA	.....	.....	a	2D	.....	8 1/4 x3 1/4 x ☆	T
42	(D) (T)..22TD	.....	144	....	22000	.....	10.00/22	10.00/22	Her DWXD	6–4 1/4x4 3/4	404	15	320	135–2600	.....	Y	Fu 5A430	5	Tim L300P	....	H	6.32–8.20	Tim 35000TW	Ws4IA	.....	.....	a	TX	.....	8x3 1/4 x 1/4	T
43	(D) (T)..H22TD	.....	144	....	22000	.....	10.00/22	....	Her DWXD	6–4 1/4x4 3/4	404	15	320	135–2600	.....	Y	Fu 5A430	5	Tim Q300P	....	H	6.53–8.53	Tim 35100TW	Ws4IA	.....	.....	a	2	.....	8 1/4 x3 1/4 x ☆	T
44	(D) (T)..25TD	.....	148	....	25000	.....	11.00/20	11.00/22	Her DRXC	6–4 5/8x5 1/4	529	14	400	148–2200	7–3 1/2x13 3/4	Y	Spl 6253	5	Tim Q300P	....	H	6.53–8.53	Tim 35000TW	Ws4IA	.....	.....	a	2	.....	8 1/4 x3 1/4 x ☆	T
45	(D) (T)..H25TD	.....	148	....	25000	.....	10.00/22	....	Her DRXC	6–4 5/8x5 1/4	529	14	400	148–2200	7–3 1/2x13 3/4	Y	Spl 6253	5	Tim R300P	....	H	6.53–8.53	Tim 35000TW	Ws4IA	.....	.....	a	2	.....	8 1/4 x3 1/4 x ☆	T
46	(D) (T)..27TD	.....	152	....	27000	.....	10.00/22	11.00/24	Cum HB600	6–4 7/8x6	672	17	500	150–1800	7–4 1/2x16 1/2	Y	Fu 5A920	5	Tim S200P‡‡	....	H	4.92–6.42	Tim 26450W	Ws4IA	.....	.....	a	2	.....	8 1/4 x3 1/4 x ☆	T
47	(D) (T)..H27TD	.....	152	....	27000	.....	10.00/22	....	Cum HB600	6–4 7/8x6	672	17	500	150–1800	7–4 1/2x16 1/2	Y	Fu 5A920	5	Tim S200P‡‡	....	H	**–6.42	Tim 26450W	Ws4IA	.....	.....	a	2	.....	8 1/4 x3 1/4 x ☆	T
48	(D) (T)..28TD	.....	155	....	28000	.....	10.00/22	11.00/24	Cum NHB600	6–5 1/4x6	743	15	575	200–2100	7–4 1/2x16 1/2	Y	Fu 5A920	5	Tim S200P‡‡	....	H	6.42	Tim 26450W	Ws4IA	.....	.....	a	2D	.....	8 1/4 x3 1/4 x ☆	T
49	(T).....26TG	.....	148	....	26000	.....	10.00/22	11.00/22	Con R6602	6–4 7/8x5 1/8	602	5.9	484	199–2600	7–3 1/4 x—	Y	Fu 5A65	5	Tim R100P‡‡	....	H	** –5.29	Tim 35100TW	Ws4IA	.....	.....	a	2	.....	8 1/4 x3 1/4 x ☆	T
50	Crosley.....B	.....	80	....	1223**	.....	4.50/12	.....	Own	4–2 1/4x2 1/4	44	7.5	33	26–5400	5–‡	..	WG-ASI-T92	3	Spl	2F	..	** –5.17	Own	Own M	64	72	C	.....	.....	.....	.....	.....
51	Dodge.....B-1-B	987	108	108	4850	.....	6.00/16-S	6.50/16-S	Own T-142	6–3 1/4x4 3/8	217	6.6	172	95–3600	4–2 1/2x4.8	N	NP-39750	3	Own T-142	H 1/2	H	4.1–4.7	Own T-142	O4IH	174	264	Co	TX	40	4 x2 1/2 x6 1/2	C
52	.....B-1-C	1070	116	116	5500	.....	TA-15-S	TA-15-S	Own T-144	6–3 1/4x4 3/8	217	6.6	172	95–3600	4–2 1/2x4.8	N	NP-39750	3	Own T-144	H 1/2	H	4.1–4.7	Own T-144	O4IH	184	276	Co	TX	48	4 x2 1/2 x6 1/2	C
53	.....B-1-D	1134	116	126	7500	.....	6.00/16S^	6.00/20	Own T-146	6–3 1/4x4 3/8	230	6.7	184	102–3600	4–2 1/2x4.8	N	NP-39980	3	Own T-146	HyF	H	3.9–4.8	Own T-146	O4IH	212	316	Co	TX	48	4 x2 1/2 x6 1/2	C
54	.....B-1-FL	1234	128	152	9500	.....	6.00/20S‡	6.50/20	Own T-148	6–3 1/4x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.054	N	NP-39760	4	Own T-148	HyF	H	5.6–6.8	Own T-148	O4IH	336	479	Ce	TX	60	21x2 3/4 x7	C
55	.....B-1-F	1234	128	192	14500	.....	6.00/20S‡	7.50/20	Own T-148	6–3 1/4x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.054	N	NP-39760	4	Own T-148	HyF	H	5.6–6.8	Own T-148	O4IH	336	479	Ce	TX	60	21x2 3/4 x7	C
56	.....B-1-FA	1456	128	192	14500	.....	6.50/20–D	8.25/20	Own T-148	6–3 1/4x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.054	N	NP-39760	4	Own TX-148	HyF	H	5.6–6.8	Own TX-148	O4IHV	336	479	Ce	TX	60	21x2 3/4 x7	C
57	.....B-1-H	1613	128	192	15500	.....	7.00/20◆	8.25/20	Own TX-148	6–3 1/4x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.054	Y	NP-39760	4	Eat A5-1350	SFd	H	5.8–8.1	Own TX-148	O4IHV	336	479	Ce	TX	60	21x2 3/4 x7	C
58	.....B-1-HA	1748	128	192	15500	.....	7.00/20◆	8.25/20	Own TX-148	6–3 1/4x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.054	Y	NP-88070	4	Own T-152	HyF	H	5.6–6.8	Own T-152	O4IH	336	479	Ce	TX	60	7/8 x2 1/4 x7	C
59	.....B-1-FM	1634	107	161	14750	.....	6.00/20S‡	7.50/20	Own T-152	6–3 1/4x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.054	N	NP-88070	4	Eat A5-1350	SFd	H	5.8–8.1	Own T-152	O4IH	336	479	Ce	TX	60	7/8 x2 1/4 x7	C
60	(c.o.e.) B-1-FMA	●1856	107	161	14750	.....	6.50/20–D	8.25/20	Own T-152	6–3 1/4x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.054	Y	NP-88070	4	Own TX-152	HyF	H	5.6–6.8	Own TX-152	O4IHV	336	479	Ce	TX	60	7/8 x2 1/4 x7	C
61	(c.o.e.) B-1-HM	●2013	107	161	15750	.....	7.00/20◆	8.25/20	Own TX-152	6–3 1/4x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.054	Y	NP-88070	4	Own TX-152	HyF	H	5.8–8.1	Own TX-152	O4IHV	336	479	Ce	TX	60	7/8 x2 1/4 x7	C
62	(c.o.e.) B-1-HMA	●2148	107	161	15750	.....	7.00/20◆	8.25/20	Own TX-152	6–3 1/4x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.054	Y	NP-88070	4	Eat A5-1350	SFd	H	5.8–8.1	Own TX-152	O4IHV	336	479	Ce	TX	60	7/8 x2 1/4 x7	C
63	.....B-1-JL	1651	128	212	16500	.....	6.00/20	8.25/20	Own T-150	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88400	5	Own T-150	HyF	H	6.2–7.1	Own T-150	O4IHV	396	553	e	TX	60	7/8 x2 1/2 x8 1/2	C
64	.....B-1-JAL	1836	128	212	16500	.....	6.00/20	8.25/20	Own T-150	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88400	5	Eat A5-1350	SFd	H	5.8–8.1	Own T-150	O4IHV	396	553	e	TX	60	7/8 x2 1/2 x8 1/2	C
65	.....B-1-KAL	2306	128	212	17000	.....	7.50/20§	9.00/20°	Own TX-150	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88400	5	Eat 6500	SFd	H	6.1–8.5	Own TX-150	O4IHV	396	553	e	TX	60	7/8 x2 1/2 x8 1/2	C
66	(c.o.e.) B-1-JML	●2051	107	161	16750	.....	6.00/20	8.25/20	Own T-154	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88410	5	Own T-154	HyF	H	6.2–7.1	Own T-154	O4IHV	396	553	e	TX	60	7/8 x2 1/2 x8 1/2	C
67	(c.o.e.) B-1-JMAL	●2236	107	161	16750	.....	6.00/20	8.25/20	Own T-154	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88410	5	Ect 6500	SFd	H	6.1–8.5	Own TX-154	O4IHV	396	553	e	TX	60	7/8 x2 1/2 x8 1/2	C
68	(c.o.e.) B-1-KMAL	●2706	107	161	17250	.....	7.50/20§	9.00/20°	Own TX-154	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88400	5	Own T-150	HyF	H	6.2–7.1	Own T-150	O4IHV	396	553	e	TX	60	7/8 x2 1/2 x8 1/2	C
69	.....B-1-J	1651	128	212	16500	.....	6.50/20D	8.25/20	Own T-150	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88400	5	Eat A5-1350	SFd	H	5.8–8.1	Own T-150	O4IHV	396	553	e	TX	60	7/8 x2 1/2 x8 1/2	C
70	.....B-1-JA	1836	128	212	16500	.....	6.50/20D	8.25/20	Own T-150	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88400	5	Eat 6500	SFd	H	6.1–8.5	Own TX-150	O4IHV	396	553	e	TX	60	7/8 x2 1/2 x8 1/2	C
71	.....B-1-KA	2306	128	212	17000	.....	7.50/20§	9.00/20°	Own TX-150	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88410	5	Own T-154	HyF	H	6.2–7.1	Own T-154	O4IHV	396	553	e	TX	60	7/8 x2 1/2 x8 1/2	C
72	.....B-1-JM	2051	107	161	16750	.....	6.50/20D	8.25/20	Own T-154	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88410	5	Eat A5-1350	SFd	H	5.8–8.1	Own T-154	O4IHV	396	553	e	TX	60	7/8 x2 1/2 x8 1/2	C
73	.....B-1-JMA	2236	107	161	16750	.....	6.50/20D	8.25/20	Own T-154	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88410	5	Eat 165500 lb.	SFd	H	6.1–8.5	Own TX-154	O4IHV	396	553	e	TX	60	7/8 x2 1/2 x8 1/2	C
74	.....B-1-KMA	●2703	107	161	17250	.....	7.50/20§	9.00/20°	Own TX-154	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88410	5	Eat 165500 lb.	SFd	H	6.1–8.5	Own TX-154	O4IHV	396	553	e	TX	60	7/8 x2 1/2 x8 1/2	C

♦—8.25/20 front tires are required when 9.00/20 dual rears are used.
** —Pick-up truck; panel delivery 1265.
^—Rear only; Front 8.25/20.

■—Chevrolet own rear axle (5.43:1) available on Models RJ-RK-RL. Chevrolet own 2-speed rear axle (5.43:1 and 7.09:1) available at extra cost on Models HyA-HyB-HyS-HyF-HyT-HyH-HyR-HyU-HyV-HyW-HyX-HyY-HyZ-HyG-HyK-HyL-HyM-HyN-HyP-HyQ-HyE. Dual rear wheels not available on models

‡‡—Two speed axles available.
‡—7.50/17 tire is optional for Rear or Front and Rear, with no increase in G.V.W.
1—Front only: Rear 6.00/20S.
2—Front only: Rear 7.00/20S.
3—Front only: Rear 8.25/20.
4—Front only: Rear 7.00/16S.
5—Sleeper cab models available.
6—1 Ford 1.375x.870; 1 Rear

†—Forward control Chassis for Door-to-Door delivery bodies.
§—Front only: Rear 7.00/20.
7—Front only: Rear 7.00/16S.
8—Includes cab.
9—Front only: Rear 7.50/20D.
10—Includes spare tire, full fuel tank and cooling system.

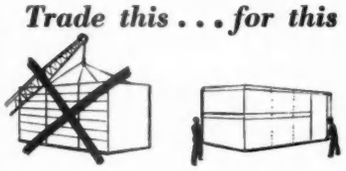
††—Diameter: (Average) Front, 2.6858; Front Center, 2.7168; Rear Center, 2.7478; Rear, 2.7788; Total length, 6 5/8.

You Can Do MORE Selling . . . LESS Building

with the new "TIME-SAVER" Brown Cargo Van

If you have a screw driver and a socket wrench You can build these bodies

Trade this . . . for this



Two Men Can Lift It!

The new CV Brown Cargo Van is extremely light in weight. Actually 2 men can lift it — 4 can carry it easily. No cranes are needed.

Here is something new and something big for you. This revolutionary new Brown Aluminum Cargo Van offers you an opportunity to really get in the profit picture. With its amazing new assembly principle you can assemble and mount a body in minutes instead of hours. That means *less* time for building — *more* time for selling, *bigger* profits for you.

The new Brown Cargo Van is shipped in ready to assemble sections. Cornerposts, longerons, stiffeners and brackets are already riveted into place. The extrusions are designed so the entire assembly nests together and is self-aligning — no jig is necessary. There are only 72 bolts to set to assemble this body.

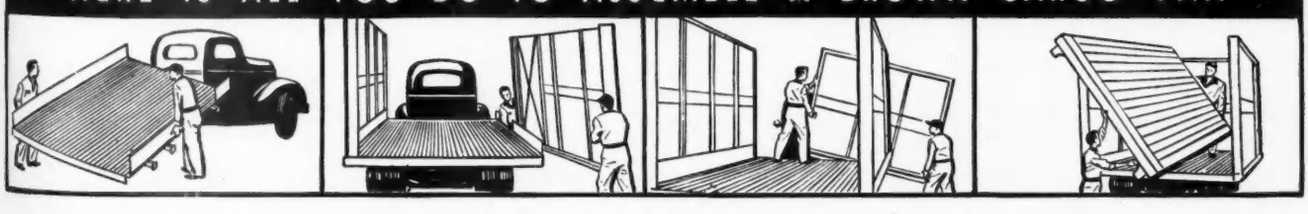
For full information on the new CV Cargo Van see your nearest Brown Industries representative or write us:

Brown ALUMINUM TRAILERS

Brown Trailer Company
Chicago 8, Illinois

Brown Industries
Spokane 1, Washington

HERE IS ALL YOU DO TO ASSEMBLE A BROWN CARGO VAN



(Continued from Page 93)

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES (D-dual rear S-single rear) Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinder, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number, Diameter and Length	Governor Standard	TRANSMISSION Make and Model	Forward Sp'ds	REAR AXLE Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make	Location	Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	Type
	Available																															
1	(c.o.e.)....200				15000	5500●	7.00/20D	8.25/20	Wau BM	6–3⅛x4¼	263	5.9	178	78–2800	7–2⅛x10¼	N	WG T9	4	Tim E100DPH	HF	H	** –6.20	Tim 32502H	L4IHV			314	534	a	TX	.....	10x3x¼	T
2	(c.o.e.)....225				16500	6200●	7.50/20D	8.25/20	Wau BZ	6–4x4¼	320	5.9	235	105–3200	7–2⅛x10¼	N	WG T97	4	Tim E100DPH	HF	H	** –6.20	Tim 32502H	L4IHV			314	534	a	TX	.....	10x3x¼	T
3	(c.o.e.)....250				20000	6400●	8.25/20D	9.00/20	Wau BZ	6–4x4¼	320	5.9	235	105–3200	7–2⅛x10¼	N	Fu 5A330	5	Tim H100DPH	HF	R	** –6.80	Tim 32502H	L4IHV			344	584	a	TX	.....	10x3x¼	T
4	(c.o.e.)....400				22000	6800●	9.00/20D	10.00/20	Wau BZ	6–4x4¼	320	5.9	235	105–3200	7–2⅛x10¼	N	Fu 5A330	5	Tim L100DPH	HF	R	** –6.83	Tim 35000H	L4IHV			370	642	a	TX	.....	12x3x¼	T
5	(c.o.e.)....500				23000	7500●	9.00/20D	10.00/20	Wau MZA	6–4¼x4¾	404	5.6	285	130–3000	7–2⅛x12½	Y	Fu 5F430	5	T m L100DPH	HF	R	** –6.83	Tim 35000H	L4IHV			370	642	a	TX	.....	12x3x¼	T
6	(c.o.e.)....550				28000	8100●	10.00/20D	11.00/20	Wau MZA	6–4¼x4¾	404	5.6	285	130–3000	7–2⅛x12½	Y	Fu 5F430	5	Tim Q100DPH	HF	R	** –7.80	Tim 26452H	L4IHV			458	846	a	TX	.....	12x3x¼	T
7	(c.o.e.)..550 X				32000	9600●	10.00/20D	11.00 24	Wau MZA	6–4¼x4¾	404	5.6	285	130–3000	7–2⅛x12½	Y	Fu 5F430	5	Tim S200DPH	2F	R	** –7.84	Tim 26452H	L4IHV			576	1054	a	FD	.....	14x3x¼	T
8	(c.o.e.)....600				28000	10000●	10.00/20D	11.00/24	Wau 140 GK	6–4 1/2x5½	525	6.4	425	172–2600	7–3¼x13⅞	Y	Fu 5A650	5	Tim R100P	HF	R	** –7.40	Tim 26452TW	L4IA			566	950	a	FD	.....	14x3x¼	T
9	(c.o.e.)....601				28000	10900●	10.00/20D	11.00/24	Wau 145 GK	6–5¼x6	779	6.2	595	240–2400	7–3½x17¾	Y	Spl 7851	4	Tim R100P	HF	R	** –7.40	Tim 26452TW	L4IA			566	950	a	FD	.....	14x3x¼	T
10	(D) (c.o.e.)....602				28000	11200●	10.00/20D	11.00/24	Cum HB600	6–4 7/16x6	672	17.500		150–1800	7–4 1/2x16½	Y	Spl 7851	4	Tim R100P	HF	R	** –7.40	Tim 26452TW	L4IA			566	950	a	FD	.....	14x3x¼	T
11	Biederman...NSH		130	190	21000	6070	8.25/20D	10.00/20	Her JXLD	6–4x4½	339	6.9	272	131–3200	7–2 1/16x10⅜	N	Fu 5A330	5	TimH700DPH	SF	H	** –7.2	Tim 35000HX	LH4IH			514	744	G	T	60	9x3x¼	C
12	.....NSD		130	190	21000	6070	8.25/20D	10.00/20	Her JXLD	6–4x4½	339	6.9	272	131–3200	7–2½x10⅜	N	Fu 5A330	5	TimH700DPH	2D	H	6.13–8.15	Tim 35000HX	LH4IH			514	744	G	T	60	9x3x¼	C
13	Chevrolet.....FP	835	116	....	4600	▼2590	6.00/16S	15S	O-Thrift Mas.	6–3½x3¾	216	6.5	174	90–3300	4– ♦ ♦	N	Own	3	Own	Hy 1/4	T	** –4.11	Own	O4IH			159	242	Co	2I	39	5¾x2¼x⅛	C
14	.....FR	945	125	....	♦5800	▼2935	15S	7.00/17S	O-Thrift Mas.	6–3½x3¾	216	6.5	174	90–3300	4– ♦ ♦	N	Own	3	Own	HyF	H	** –4.57	Own	O4IH			178	272	Co	2I	48¼	5⅛x2¼x⅛	C
15	† Fwd. Control.FT	1035	125	....	♦7000	2675	15S	7.00/17S	O-Thrift Mas.	6–3 1/16x3¾	216	6.5	172	90–3300	4– ♦ ♦	N	Own	3	Own	HyF	H	** –5.14	Own	O4IH			202	371	Co	2I	.....	5⅛x2 1/16x⅛	C
16	.....FS	1025	137	....	8 :00	▼3170	7.00/17S	7.00/18	O-Thrift Mas.	6–3½x3¾	216	6.5	174	90–330(	4– ♦ ♦	N	Own	4	Own	HyF	H	** –5.14	Own	O4IH			243	371	Co	2I	60	7x2¾x⅛	C
17	† Fwd. Control.FU	1125	137	....	10000	2880	7.00/17S	7.00/18	O-Thrift Mas.	6–3½x3¾	216	6.5	172	90–3300	4– ♦ ♦	N	Own	4	Own	HyF	H	** –5.14	Own	O4IH			248	302	Co	2I	.....	7x2¾x⅛	C
18	.....RJ	1100	137	....	1 :00	▼3 :20	7.00/20S	7.50/20	O-Thrift Mas.::	6–3½x3¾	216	6.5	174	90–3300	4– ♦ ♦	N	Own	4	Own	HyF	H	6.17	Own	O4IH			330	478	Co	2I	60	7x2¾x⅛	C
19	.....RK	1135	161	....	1 :00	▼3740	7.00/20S	7.50/20	O-Thrift Mas.::	6–3½x3¾	216	6.5	174	90–3300	4– ♦ ♦	N	Own	4	Own	HyF	H	6.17	Own	O4IH			330	478	Co	2I	84	8¼x2¼x¼	C
20	(School bus) .RL	1280	161	....	12000	▼4120	6.50/20D	7.00/20	O-Thrift Mas.::	6–3½x3¾	216	6.5	174	90–3300	4– ♦ ♦	N	Own	4	Own	HyF	H	6.17	Own	O4IH			330	478	Co	2I	.....	8¼x2½x¼	C
21	.....RVS	1470	137	....	15000	▼4230	7.50/20D	9.00/20◆◆	O-Load Mas.	6–3⅞x3½	235	6.6	192	93–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17	Own	O4IH			330	478	Co	2I	60	8¼x2½x¼	C
22	.....RWS	1505	161	....	15000	▼4290	7.50/20D	9.00/20◆◆	O-Load Mas.	6–3⅞x3½	235	6.6	192	93–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17	Own	O4IH			330	478	Co	2I	84	8¼x2½x¼	C
23	(c.o.e.).....RPS	●1825	110	....	15000	▼4755	7.50/20D	9.00/20◆◆	O-Load Mas.	6–3⅞x3½	235	6.6	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	–6.17	Own	O4IH			330	478	Co	2I	60½	8¼x2½x¼	C
24	(c.o.e.).....RRS	●1860	134	....	15000	▼4805	7.50/20D	9.00/20◆◆	O-Load Mas.	6–3⅞x3½	235	6.6	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	–6.17	Own	O4IH			330	478	Co	2I	84½	8¼x2½x¼	C
25	(c.o.e.).....RSS	●1895	158	....	15000	▼4900	7.50/20D	9.00/20◆◆	O-Load Mas.	6–3⅞x3½	235	6.6	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	–6.17	Own	O4IH			330	478	Co	2I	108½	8¼x2½x¼	C
26	(c.o.e.).....RP	●1825	110	....	16000	▼4755	7.50/20D	9.00/20◆	O-Load Mas.	6–3⅞x3½	235	6.6	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17	Own	O4IH			330	478	Co	2I	60½	8¼x2½x¼	C
27	(c.o.e.).....RR	●1860	134	....	16000	▼4805	7.50/20D	9.00/20◆	O-Load Mas.	6–3⅞x3½	235	6.6	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17	Own	O4IH			330	478	Co	2I	84½	8¼x2½x¼	C
28	(c.o.e.).....RS	●1895	158	....	16000	▼4900	7.50/20D	9.00/20◆	O-Load Mas.	6–3⅞x3½	235	6.6	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17	Own	O4IH			330	478	Co	2I	108½	8¼x2½x¼	C
29	.....RV	1470	137	....	16000	▼4230	7.50/20D	9.00/20◆	O-Load Mas.	6–3⅞x3½	235	6.6	192	93–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17	Own	O4IH			330	478	Co	2I	60	8¼x2½x¼	C
30	.....RW	1505	161	....	16000	▼4290	7.50/20D	9.00/20◆	O-Load Mas.	6–3⅞x3½	235	6.6	192	93–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17	Own	O4IH			330	478	Co	2I	84	8¼x2½x¼	C
31	(School bus) .RX	1550	199	....	15000	▼4715	7.50/20D	8.25/20	O-Load Mas.	6–3⅞x3½	235	6.6	192	93–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17	Own	O4IH			330	478	Co	2I	.....	8¼x2½x¼	C
32	Corbitt■.....18BG	.....	181	....	18000	.....	9.00/20	10.00/20	Con M6330	6–4x4⅛	330	6.1	246	104–2800	7–2⅝x12	Y	Cla 205V	5	TimH100DPH	....	H	**–5.29	Tim 32502H	B4IHV			.....	.....	a	TX	.....	8x3¼x¼	T
33	.....22BG	.....	190	....	22000	.....	10.00/20	10.00/22	Con B6371	6–4 1/16x4⅝	371	6.0	280	100–2600	7–2⅞x13 1/2	Y	Fu 5A43	5	Tim L100DPH	....	H	**–5.29	Tim 35000H	B4IHV			.....	.....	a	TX	.....	8x3¼x¼	T
34	.....25BG	.....	200	....	25000	.....	10.00/22	11.00/22	Con B6427	6–4 1/8x4⅞	427	5.9	325	127–2600	7–2⅞x13½	Y	Fu 5A43	5	Tim Q100P	....	H	**–6.17	Tim 35100TW	W84IA			.....	.....	a	TX	.....	8¼x3¼x¼	T
35	(T).....18TG	.....	137	....	18000	.....	9.00/20	10.00/20	Con M6330	6–4x4⅜	330	6.1	246	104–2800	7–2⅝x12	Y	Cla 205V	5	Tim H100P‡‡	....	H	**–5.29	Tim 32505TW	W84IA			.....	.....	a	TX	.....	7⅛x3¼x¼	T
36	(T).....H18TG	.....	137	....	20000	.....	10.00/20	.....	Con M6330	6–4x4⅜	330	6.1	246	104–2800	7–2⅝x12	Y	Cla 205V	5	Tim L100P‡‡	....	H	**–5.29	Tim 32505TW	W84IA			.....	.....	a	TX	.....	7⅛x3¼x¼	T
37	(T).....22TG	.....	144	....	22000	.....	10.00/20	10.00/22	Con B6427	6–4 1/8x4⅞	427	5.9	325	127–2600	7–2⅞x13½	Y	Fu 5A43	5	Tim L100P‡‡	....	H	**–5.29	Tim 35000TW	W84IA			.....	.....	a	TX	.....	8x3¼x¼	T
38	(T).....H22TG	.....	144	....	24000	.....	10.00/22	.....	Con B6427	6–4 1/8x4⅞	427	5.9	325	127–2600	7–2⅞x13½	Y	Fu 5A43	5	Tim Q100P‡‡	....	H	**–5.29	Tim 35100TW	W84IA			.....	.....	a	TX	.....	8x3¼x¼	T
39	(T).....25TG	.....	148	....	25000	.....	10.00/22	11.00/22	Con R6513	6–4½x5⅜	513	5.9	400	170–2600	7–3¼x—	Y	Spl 6253	5	Tim Q100P‡‡	....	H	**–6.17	Tim 35100TW	W84IA			.....	.....	a	2	.....	8¼x3¼x⅛	T
40	(T).....H25TG	.....	148	....	25000	.....	10.00/22	.....	Con R6513	6–4½x5⅜	513	5.9	400	170–2600	7–3¼x—	Y	Spl 6253	5	Tim R100P‡‡	....	H	**–6.17	Tim 35100TW	W84IA			.....	.....	a	2	.....	8¼x3¼x⅛	T
41	(T).....28TG	.....	147	....	28000	.....	10.00/22	11.00/24	Con R6602	6–4½x5⅜	602	5.9	484	199–2600	7–3¼x—	Y	Fu 5A650	5	Tim S200P‡‡	....	H	**–6.42	Tim 26450TW	W84IA			.....	.....	a	2D	.....	8¼x3¼x⅛	T
42	(D) (T).....22TD	.....	144	....	22000	.....	10.00/20	10.00/22	Her DWXD	6–4¼x4¾	404	15	320	135–2600	.....	Y	Fu 5A430	5	Tim L300P	....	H	6.32–8.20	Tim 35000TW	W84IA			.....	.....	a	TX	.....	8x3¼x¼	T
43	(D) (T).H22TD	.....	141	....	22000	.....	10.00/22	.....	Her DWXD	6–4¼x4¾	404	15	320	135–2600	.....	Y	Fu 5A430	5	Tim Q300P	....	H	6.53–8.53	Tim 35100TW	W84IA			.....	.....	a	TX	.....	8x3¼x¼	T
44	(D) (T)..25TD	.....	148	....	25000	.....	11.00/20	11.00/22	Her DRXC	6–4⅝x5¼	529	14	400	148–2200	7–3½x13⅜	Y	Spl 6253	5	Tim Q300P	....	H	6.53–8.53	Tim 35000TW	W84IA			.....	.....	a	2	.....	8¼x3¼x⅛	T
45	(D) (T)..H25TD	.....	148	....	25000	.....	10.00/22	.....	Her DRXC	6–4⅝x5¼	529	14	400	148–2200	7–3½x13⅜	Y	Spl 6253	5	Tim R300P	....	H	6.53–8.53	Tim 35000TW	W84IA			.....	.....	a	2	.....	8¼x3¼x⅛	T
46	(D) (T)..27TD	.....	152	....	27000	.....	10.00/22	11.00/24	Cum HB600	6–4 7/16x6	672	17	500	150–1800	7–4½x16½	Y	Fu 5A920	5	Tim R300P	....	H	4.92–6.42	Tim 26450W	W84IA			.....	.....	a	2	.....	8¼x3¼x⅛	T
47	(D) (T)..H27TD	.....	152	....	27000	.....	10.00/22	.....	Cum HB600	6–4 7/16x6	672	17	500	150–1800	7–4½x16½	Y	Fu 5A920	5	Tim S200P‡‡	....	H	**–6.42	Tim 26450W	W84IA			.....	.....	a	2	.....	8¼x3¼x⅛	T
48	(D) (T)..28TD	.....	155	....	28000	.....	10.00/22	11.00/24	Cum NHB600	6–5½x6	743	15	575	200–2100	7–4½x16½	Y	Fu 5A920	5	Tim S200P‡‡	....	H	6.42	Tim 26450W	W84IA			.....	.....	a	2D	.....	8¼x3¼x⅛	T
49	(T).....26TG	.....	148	....	26000	.....	10.00/22	11.00/22	Con R6602	6–4 7/16x5⅜	602	5.9	484	199–2600	7–3¼x—	Y	Fu 5A65	5	Tim R100P‡‡	....	H	** –5.29	Tim 35100TW	W84IA			.....	.....	a	2	.....	8¼x3¼x⅛	T
50	Crosley.....B	.....	80	....	1223°°	.....	4.50/12	.....	Own	4–2½x2¼	44	7.5	33	26–5400	5–‡	..	WG-ASI-T92	3	Spl	2F	..	** –5.17	Own	Own M			64	72	C	.....	.....	.....	.....
51	Dodge.....B-1-B	987	108	108	4850	.....	6.00/16-S	6.50/16-S	Own T-142	6–3¼x4⅜	217	6.6	172	95–3600	4–2½x4.8	N	NP-39750	3	Own T-142	H½	H	4.1–4.7	Own T-142	O4IH			174	264	Co	TX	40	⅛x2⅛x6½	C
52	.....B-1-C	1070	116	116	5500	.....	TA-15-S	TA-15-S	Own T-144	6–3¼x4⅜	217	6.6	172	95–3600	4–2½x4.8	N	NP-39750	3	Own T-144	H½	H	4.1–4.7	Own T-144	O4IH			184	276	Co	TX	48	⅛x2⅛x6½	C
53	.....B-1-D	1134	116	126	7500	.....	6.00/16S△	6.00/20	Own T-146	6–3¼x4⅜	230	6.7	184	102–3600	4–2½x4.8	N	NP-39980	3	Own T-146	H½	H	3.9–4.8	Own T-146	O4IH			212	316	Co	TX	48	⅛x2⅛x6½	C
54	.....B-1-FL	1234	128	152	9500	.....	6.00/20S‡	6.50/20	Own T-148	6–3 1/16x4¼	236	6.6	192	109–3600	4–2 1/16x5.054	N	NP-39760	4	Own T-148	HyF	H	5.6–6.8	Own T-148	O4IH			336	479	Cc	TX	60	21x2¾x7	C
55	.....B-1-F	1234	128	192	14500	.....	6.00/20S‡	7.50/20	Own T-148	6–3 1/16x4¼	236	6.6	192	109–3600	4–2 1/16x5.054	N	NP-39760	4	Own T-148	HyF	H	5.6–6.8	Own T-148	O4IH			336	479	Cc	TX	60	21x2¾x7	C
56	.....B-1-FA	1456	128	192	14500	.....	6.50/20-D	8.25/20	Own T-148	6–3 1/16x4¼	236	6.6	192	109–3600	4–2 1/16x5.054	N	NP-39760	4	Eat A5-1350	SFd	H	5.8–8.1	Own T-148	O4IH			336	479	Cc	TX	60	21x2¾x7	C
57	.....B-1-H	1613	128	192	15500	.....	7.00/20◆	8.25/20	Own TX-148	6–3 1/16x4¼	236	6.6	192	109–3600	4–2 1/16x5.054	N	NP-39760	4	Own TX-148	HyF	H	5.6–6.8	Own TX-148	O4IHV			336	479	Cc	TX	60	21x2¾x7	C
58	.....B-1-HA	1748	128	192	15500	.....	7.00/20◆	8.25/20	Own TX-148	6–3 1/16x4¼	236	6.6	192	109–3600	4–2 1/16x5.054	N	NP-39760	4	Eat A5-1350	SFd	H	5.8–8.1	Own TX-148	O4IHV			336	479	Cc	TX	60	21x2¾x7	C
59	.....B-1-FM	1634	107	161	14750	.....	6.00/20‡‡S	7.50/20	Own T-152	6–3 1/16x4¼	236	6.6	192	109–3600	4–2 1/16x5.054	N	NP-88070	4	Own T-152	HyF	H	5.6–6.8	Own T-152	O4IH			336	479	Cc	TX	60	½x2¾x7	C
60	(c.o.e.) B-1-FMA	●1856	107	161	14750	.....	6.50/20-D	8.25/20	Own T-152	6–3 1/16x4¼	236	6.6	192	109–3600	4–2 1/16x5.054	N	NP-88070	4	Eat A5-1350	SFd	H	5.8–8.1	Own T-152	O4IH			336	479	Cc	TX	60	½x2¾x7	C
61	(c.o.e.) .B-1-HM	●2013	107	161	15750	.....	7.00/20◆	8.25/20	Own TX-152	6–3 1/16x4¼	236	6.6	192	109–3600	4–2 1/16x5.054	N	NP-88070	4	Own TX-152	HyF	H	5.6–6.8	Own TX-152	O4IHV			336	479	Cc	TX	60	½x2¾x7	C
62	(c.o.e.) B-1-HMA	●2148	107	161	15750	.....	7.00/20◆	8.25/20	Own TX-152	6–3 1/16x4¼	236	6.6	192	109–3600	4–2 1/16x5.054	N	NP-88070	4	Eat A5-1350	SFd	H	5.8–8.1	Own TX-152	O4IHV			336	479	Cc	TX	60	½x2¾x7	C
63	.....B-1-JL	1651	128	212	16500	.....	6.00/20	8.25/20	Own T-150	6–3 1/16x4½	250	6.6	204	114–3600	4–2 1/16x5.054	N	NP-88400	5	Own T-150	HyF	H	6.2–7.1	Own T-150	O4IHV			396	553	e	TX	60	½x2⅜x8⅛	C
64	.....B-1-JAL	1836	128	212	16500	.....	6.00/20	8.25/20	Own T-150	6–3 1/16x4½	250	6.6	204	114–3600	4–2 1/16x5.054	N	NP-88400	5	Eat A5-1350	SFd	H	5.8–8.1	Own T-150	O4IHV			396	553	e	TX	60	½x2⅜x8⅛	C
65	.....B-1-KAL	2306	128	212	17000	.....	7.50/20◆	9.00/20°	Own TX-150	6–3 1/16x4½	250	6.6	204	114–3600	4–2 1/16x5.054	N	NP-88400	5	Eat 6500	SFd	H	6.1–8.5	Own TX-150	O4IHV			396	553	e	TX	60	½x2⅜x8⅛	C
66	(c.o.e.) B-1-JML	●2051	107	161	16750	.....	6.00/20	8.25/20	Own T-154	6–3 1/16x4½	250	6.6	204	114–3600	4–2 1/16x5.054	Y	NP-88410	5	Own T-154	HyF	H	6.2–7.1	Own T-154	O4IHV			396	553	e	TX	60	½x2⅜x8⅛	C
67	(c.o.e.)B-1-JMAL	●2236	107	161	16750	.....	6.00/20	8.25/20	Own T-154	6–3 1/16x4½	250	6.6	204	114–3600	4–2 1/16x5.054	Y	NP-88410	5	Eat A5-1350	SFd	H	5.8–8.1	Own T-154	O4IHV			396	553	e	TX	60	½x2⅜x8⅛	C
68	(c.o.e.)B-1-KMAL	●2706	107	161	17250	.....	7.50/20◆	9.00/20°	Own TX-154	6–3 1/16x4½	250	6.6	204	114–3600	4–2 1/16x5.054	Y	NP-88410	5	Eat 6500	SFd	H	6.1–8.5	Own TX-154	O4IHV			396	553	e	TX	60	½x2⅜x8⅛	C
69	.....B-1-J	1651	128	212	16500	.....	6.50/20D	8.25/20	Own T-150	6–3 1/16x4½	250	6.6	204	114–3600	4–2 1/16x5.054	Y	NP-88400	5	Own T-150	HyF	H	6.2–7.1	Own T-150	O4IHV			396	553	e	TX	60	½x2⅜x8⅛	C
70	.....B-1-JA	1806	128	212	16500	.....	6.50/20D	8.25/20	Own T-150	6–3 1/16x4½	250	6.6	204	114–3600	4–2 1/16x5.054	Y	NP-88400	5	Eat A5-1350	SFd	H	5.8–8.1	Own T-150	O4IHV			396	553	e	TX	60	½x2⅜x8⅛	C
71	.....B-1-KA	2306	128	212	17000	.....	7.50/20◆	9.00/20°	Own TX-150	6–3 1/16x4½	250	6.6	204	114–3600	4–2 1/16x5.054	Y	NP-88400	5	Eat 6500	SFd	H	6.1–8.5	Own TX-150	O4IHV			396	553	e	TX	60	½x2⅜x8⅛	C
72	.....B-1-JM	2051	107	161	16750	.....	6.50/20D	8.25/20	Own T-154	6–3 1/16x4½	250	6.6	204	114–3600	4–2 1/16x5.054	Y	NP-88410	5	Own T-154	HyF	H	6.2–7.1	Own T-154	O4IHV			396	553	e	TX	60	½x2⅜x8⅛	C
73	.....B-1-JMA	2236	107	161	16750	.....	6.50/20D	8.25/20	Own T-154	6–3 1/16x4½	250	6.6	204	114–3600	4–2 1/16x5.054	Y	NP-88410	5	Eat A5-1350	SFd	H	5.8–8.1	Own T-154	O4IHV			396	553	e	TX	60	½x2⅜x8⅛	C
74	.....B-1-KMA	●2703	107	161	17250	.....	7.50/20◆	9.00/20°	Own TX-154	6–3 1/16x4½	250	6.6	204	114–3600	4–2 1/16x5.054	Y	NP-88410	5	Eat 16500 lb.	SFd	H	6.1–8.5	Own TX-154	O4IHV			396	553	e	TX	60	½x2⅜x8⅛	C

†—8.25/20 front tires are required when 9.00/20 dual rears are used.
°°—Pick-up truck; panel delivery 1265.
°—Rear only: front 8.25/20.

(Turn to Page 96, please)

■—Chevrolet own rear axle (5.43:1) available on Models RJ-RK-RL. Chevrolet own 2-speed rear axle (6.13–8.10:1) available at extra cost on Models RVS-RWS-RP-RPS-RR-RRS-RS-RSS-RV-RW-RX.
::—Own Loadmaster engine available on models RJ-RK-RL at extra cost.

‡‡—Two speed axles available.
♦—7.50/17 tire is optional for Rear or Front and Rear, with no increase in G.V.W.
△—Front only: Rear 6.50/20S.
▲—7.50/20 can be used on the front with no decrease in 15000 G. V. W. when 8.25/20 are used on dual rear wheels.

†-Forward control Chassis for Door-to-Door delivery bodies.
§—Front only: Rear 8.25/20.
△—Front only; Rear 7.00/16S.
●—Sleeper cab models available.
‡—1 Front 1.375x1.312; 3 Center 1.375x.870; 1 Rear 1.500x1.499.

♦♦—Diameter: (Average) Front, 2.6858; Front Center, 2.7168; Rear Center, 2.7478; Rear, 2.7788; Total length, 5⅝.
●—Includes cab.
‡—Front only; Rear 7.50/20D.
§—Includes spare tire, full fuel tank and cooling system.

You Can Do MORE Selling . . . LESS Building

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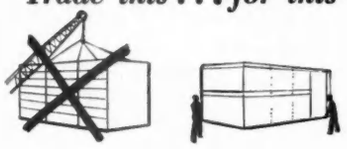

Two Men Can Lift It!

The new CV Brown Cargo Van is extremely light in weight. Actually 2 men can lift it — 4 can carry it easily. No cranes are needed.

Here is something new and something big for you. This revolutionary new Brown Aluminum Cargo Van offers you an opportunity to really get in the profit picture. With its amazing new assembly principle you can assemble and mount a body in minutes instead of hours. That means *less* time for building — *more* time for selling, *bigger* profits for you.

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Brown Trailer Company
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HERE IS ALL YOU DO TO ASSEMBLE A BROWN CARGO VAN

(Continued from Page 94)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number, Diameter and Length	Governor Standard	TRANSMISSION Make and Model	TRANSMISSION Forward Sp'ds	REAR AXLE Make and Model	REAR AXLE Gear and Type	REAR AXLE Drive & Torque	REAR AXLE Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operat'n	BRAKES SERVICE Lining Area	BRAKES SERVICE Drum Area	BRAKES SERVICE Drum Material	BRAKES Hand Location Type	C-A Dimension (Min. Std. W. B.)	FRAME Side Rail Dimensions	FRAME Type
	Dodge Cont'd																														
1	B-1-R	2689	130	229	18500	.....	7.50/20D	9.00/20	Own T-156	6–3¾x4¼	281	6.4	225	115–3200	7–3x11.2	Y	NP-88220	5	TimH100DPH	HyF	H	6.8–7.2	Own T-156	O4IHV	396	609c	TX	60		⅞x2½x9½	C
2	B-1-RA	2920	130	229	18500	.....	7.50/20D	9.00/20	Own T-156	6–3¾x4¼	281	6.4	225	115–3200	7–3x11.2	Y	NP-8 220	5	Tim H-300	HFd	H	6.1-8.8	Own T-156	O4IHV	396	609c	TX	60		⅞x2½x9½	C
3	B-1-T	3180	130	190	21000	.....	7.50/20△	10.00/20	Own T-158	6–3¾x5	331	6.5	270	128–3000	7–3x11.2	Y	NP-88450	5	Tim L-100	HyF	H	6.8–7.4	Tim 32516A1	O4IHV	424	666c	TX	60		¼x3x10	C
4	B-1-TA	3435	130	190	21000	.....	7.50/20△	10.00/20	Own T-158	6–3¾x5	331	6.5	270	128–3000	7–3x11.2	Y	NP-88450	5	Tim L-300	HFd	H	6.3–9.1	Tim 32516A1	O4IHV	424	666c	TX	60		¼x3x10	C
5	B-1-V	3534	130	190	23000	.....	9.00/20†	11.00/20	Own T-158	6–3¾x5	331	6.5	270	128–3000	7–3x11.2	Y	NP-88450	5	Tim Q-100	HyF	H	6.8–7.8	Tim 35021-NX9	O4IHV	485	770c	TX	60		¼x3x10	C
6	B-1-VA	3810	130	190	23000	.....	9.00/20†	11.00/20	Own T-158	6–3¾x5	331	6.5	270	128–3000	7–3x11.2	Y	NP-88450	5	Tim Q-300	HFd	H	6.5–9.5	Tim 35020-NX9	O4IHV	485	770c	TX	60		¼x3x10	C
	School Buses																														
7	Dodge..B-1-FS-152	1393	152	192	15000	.....	6.50/20D	7.00/20	Own T-148	6–3⅞4x½	236	6.6	192	109–3600	4–2½x5.054	N	NP-39760	4	Own T-148	HyF	H	5.6–6.8	Own T-148	O4IH	336	479Ce	TX	.....		21x2¾x7	C
8	B-1-JS-212	2187	212	212	17000	.....	7.50/20D	8.25/20	Own T-150	6–3⅞x4½	250	6.6	204	114–3600	4–2½x5.054	Y	NP-88400	5	Own T-150	HyF	H	6.2–7.1	Own T-150	O4IHV	396	553c	TX	.....		⅝x2⅞x8⅝	C
9	B-1-RS-229	3097	229	229	19000	.....	8.25/20D	9.00/20	Own T-156	6–3¾x4¼	281	6.4	225	115–3200	7–3x11.2	Y	NP-88220	5	TimH100DPH	HyF	H	6.8–8.1	Own T-156	O4IHV	396	609c	TX	.....		⅞x2½x9½	C
10	Duplex.....T	.....	136	220	18000	6600	8.25/20D	9.00/20	Her JXD	6–4x4¼	320	6.2	240	113–3000	7–2½x10½	Y	Fu 5B330	5	Tim H100	B	H	** –7.20	Tim 32502	L4IHV	420	654	A	TX	57¾	9⅛x3½x⅜	C
11	.....TH-404	.....	136	220	18000	6900	8.25/20D	9.00/20	Her WXLC3	6–4⅛x4¾	404	5.8	312	139–2600	7–2⅝x13¾	Y	FU-5A430	5	Tim H-300	DF	H	6.13–8.15	Tim 32502	L41HV	420	654	A	TX	49¾	9⅛x3½x⅜	C
12	.....R	.....	136	220	25000	8820	9.00/20D	10.00/20	Her WXLC-3	6–4⅛x4¾	404	5.8	312	139–2600	7–2⅝x13¾	Y	Fu 5A43	5	Tim Q300	DF	R	6.53–8.53	Tim 35100	L4IHV	730	1016	A	TX	49¼	9⅛x3½x⅜	C
13	.....JHA	.....	148	220	28000	9800	10.00/20D	11.00/20	Her RXB	6–4½x5¼	501	5.4	360	137–2400	7–3x13¾	Y	Fu 5A620	5	Tim 8-00	2F	R	** –9.83	Tim 26450	Ws41A	912	1311	A	TX	61¼	10⅛x3½x⅜	C
14	.....JH-558	.....	148	220	28000	9800	10.00/20D	11.00/20	Her RXLD	6–4½x5¼	558	6.3	430	154–2400	7–3½x13¾	Y	FU-5A650	5	Tim 8-300	DF	R	6.53–8.53	Tim 26450	Ws41A	912	1311	A	TX	60¾	10⅛x3½x⅜	C
15	.....KHA	.....	148	220	32000	10500	11.00/20D	11.00/20	Her RXC	6–4½x5¼	529	5.4	395	132–2300	7–3x13¾	Y	Fu 5A620	5	Tim U-200	2F	R	** –9.83	Tim 26450	Ws41A	912	1311	A	TX	60½	10⅛x3½x⅜	C
16	L	.....	148	220	37000	11300	11.00/20D	11.00/20	Her RXLD	6–4⅞x5¼	558	5.4	430	154–2400	7–3½x13¾	Y	Fu 5C650	5	Tim U-200	2F	R	** –9.83	Tim 26450	Ws41A	912	1311	A	TX	60¾	10⅛x3½x⅜	C
17	Federal.....16M	.....	139	194	.....	4460	7.50/20D	7.50/20	Her JXEF	6–3½x4¼	245	6.5	184	90–3100	7–2½x10½	N	WG T9	4	T 53547DPH	BF	H	** –5.66	Tim 30000HX	L4IHV	310	482	a	TX	60	8⅛x2⅞x¼	T
18	.....16M2	.....	139	194	.....	4590	7.50/20D	8.25/20D	Her JXEF	6–3½x4¼	245	6.5	184	90–3100	7–2½x10½	N	WG T9	4	Tim E300DPH	dF	H	6.13–8.10	Tim 30000HX	L41HV	310	482	a	TX	60	8⅛x2⅞x¼	T
19	.....18M	.....	139	194	.....	4700	8.25/20D	8.25/20	Her JXBF	6–3⅝x4¼	263	6.5	190	96–3000	7–2½x10½	N	WG T9	4	Tim E100DPH	SF	H	** –6.20	Tim 30003H	LT41HV	314	532	a	TX	60	8⅛x2⅞x¼	T
20	.....18M2	.....	139	194	.....	4830	8.25/20D	8.25/20	Her JXBF	6–3⅝x4¼	263	6.5	190	96–3000	7–2½x10½	N	WG T9	8	Tim E300DPH	dF	H	6.13–8.10	Tim 30003H	LT4IHV	314	532	a	TX	60	8⅛x2⅞x¼	T
21	.....25M	.....	139	194	.....	4950	8.25/20D	9.00/20	Her JXCF	6–3¾x4¼	282	6.5	212	102–3000	7–2½x10⅛	N	Cla 205VO	5	TimH100DPH	SF	H	** –6.80	Tim 3100H	LT4IHV	346	583	a	TX	60	8⅛x2⅞x¼	T
22	.....25M2	.....	139	194	.....	5100	8.25/20D	9.00/20	Her JXCF	6–3¾x4¼	282	6.5	212	102–3000	7–2½x10⅛	N	Cla 205VO	5	TimH300DPH	dF	H	6.13–8.15	Tim 3100H	LT4IHV	346	583	a	TX	60	8⅛x2⅞x¼	T
23	.....29M	.....	139	194	.....	5500	9.00/20D	10.00/20	Her JXDF	6–4x4¼	320	6.5	250	112–2800	7–2½x10½	N	Cla 205V	5	Tim L100DPH	SF	H	** –6.83	Tim 32514H	LT4IHV	466	820	a	TX	60	8⅛x2⅞x¼	T
24	.....29M2	.....	139	194	.....	5690	9.00/20D	10.00/20	Her JXDF	6–4x4¼	320	6.5	250	112–2800	7–2½x10½	N	Cla 205V	10	Tim L300DPH	dF	H	6.32–8.22	Tim 32514H	LT4IHV	466	820	a	TX	60	8⅛x2⅞x¼	T
25	.....29MA	.....	155	194	.....	5950	9.00/20D	10.00/20	Her JXDF	6–4x4¼	320	6.5	250	112–2800	7–2½x10½	N	Cla 205V♦	15	Tim L100DPH	SF	H	** –6.83	Tim 32514H	LT4IHV	466	820	a	TD	76	8⅛x2⅞x¼	T
26	.....29ML	.....	139	194	.....	5535	9.00/20D	10.00/20	Here JXLDF	6–4x4½	339	6.5	272	126–2800	7–2½x10½	N	Cla 205V	5	Tim L100DPH	SF	H	** –6.83	Tim 32514H	LT4IHV	466	820	a	TX	60	8⅛x2⅞x¼	†T
27	.....29ML2	.....	139	194	.....	5725	9.00/20D	10.00/20	Here JXLDF	6–4x4½	339	6.5	272	126–2800	7–2½x10½	N	Cla 205V	10	Tim L300DPH	dF	H	6.32–8.22	Tim 32514H	LT4IHV	466	820	a	TX	60	8⅛x2⅞x¼	†T
28	.....29MLA	.....	155	194	.....	5985	9.00/20D	10.00/20	Here JXLDF	6–4x4½	339	6.5	272	126–2800	7–2½x10½	N	Cla 205V	15	Tim L100DPH	SF	H	** –6.83	Tim 32514H	LT4IHV	466	820	a	TD	76	8⅛x2⅞x¼	†T
29	.....35M	.....	143	203	.....	6925	9.00/20D	10.00/20	Con T6371F	6–4⅛x4⅝	371	6.6	290	133–2600	7–2⅝x13½	Y	Cla 270VO	5	Tim L100DPH	SF	R	**–6.83	Tim 32514H	LT4IHV	466	820	a	TX	60½	10⅛x3⅛x⅜	●T
30	.....35M2	.....	143	203	.....	7115	9.00/20D	10.00/20	Con T6371F	6–4⅛x4⅝	371	6.6	290	133–2600	7–2⅝x13½	Y	Cla 270VO	10	Tim L300DPH	dF	R	6.32–8.22	Tim 32514H	LT4IHV	466	820	a	TX	60½	10⅛x3⅛x⅜	●T
31	.....45M	.....	143	203	.....	8005	10.00/22D	10.00/24	Con T6427F	6–4⅞x4⅝	427	6.4	342	155–2600	7–2⅞x13½	Y	Cla 270VO	5	Tim Q100P	8F	R	** –6.83	Tim 35011TW	TW41A	606	933	a	TD	60½	10⅛x3⅛x⅜	●T
32	.....45M2	.....	143	203	.....	8380	10.00/22D	10.00/24	Con T6427F	6–4⅞x4⅝	427	6.4	342	155–2600	7–2⅞x13½	Y	Cla 270VO	10	Tim Q300P	dF	R	6.53–8.53	Tim 35011TW	TW41A	606	933	a	TD	60½	10⅛x3⅛x⅜	●T
33	.....55M2	.....	143	203	.....	8635	11.00/22D	11.00/24	Con T6427F	6–4⅞x4⅝	427	6.4	342	155–2600	7–2⅞x13½	Y	Cla 270VO	10	Tim S300P	HyF	R	6.53–8.53	Tim 36021TW	TW41A	722	1051	a	TD	60½	10⅛x3⅛x⅜	●T
34	.....55MA	.....	155	203	.....	8765	11.00/22D	11.00/24	Con T6427F	6–4⅞x4⅝	427	6.4	342	155–2600	7–2⅞x13½	Y	Cla 270V♦	15	Tim S200P	2F	R	** –7.08	Tim 36021TW	TW41A	722	1051	a	TD	72½	10⅛x3⅛x⅜	●T
35	.....60MA	.....	155	203	.....	9600	11.00/22D	11.00/24	Con 22RF	6–4½x5¼	501	5.4	384	148–2400	7–2¾x14½	Y	Fu 5A65§	15	Tim S200P	2F	R	** –7.08	Tim 36021TW	Tw41A	722	1051	a	FX	72½	10⅛x3⅛x⅜	●T
36	.....60M2	.....	143	203	.....	9370	11.00/22D	11.00/24	Con 22RF	6–4½x5¼	501	5.4	384	148–2400	7–2¾x14½	Y	Fu 5A650	10	Tim S300P	HyF	R	6.53–8.53	Tim 36021TW	Tw41A	722	1051	a	TX	60½	10⅛x3⅛x⅜	●T
37	.....65M2	.....	141	201	.....	9995	11.00/22D	11.00/24	Con R6602F	6–4⅞x5⅜	602	6.1	464	200–2600	7–3¼x14½	Y	Fu 5A650	10	Tim S300P	HyF	R	6.53–8.53	Tim 36000TW	Ws41A	722	1051	a	TX	60½	10⅛x3⅛x⅜	●T
38	.....65MA	.....	153	201	.....	10225	11.00/22D	11.00/24	Con R6602F	6–4⅞x5⅜	602	6.1	464	200–2600	7–3¼x14½	Y	Fu 5A65§	15	Tim S200P	HyF	R	** –7.08	Tim 36000TW	Ws41A	722	1051	a	TX	72½	10⅛x3⅛x⅜	●T
	Ford F-1																														
39	Cowl....8HC-84	930	114	114	4700	2224	6.00/16-4	6.50/16-6S	Own 7HC	6–3 3x4 4	226	6.8	180	95–3300	4–2 87x4 8	N	Own 21C	3	Own 8C	H½	H	3.73–4.27	Own 8RC	O4IH	178	259	Co	M2	40.06	5.92x2¼x15	T
40	Cowl....8RC-84	960	114	114	4700	2264	6.00/16-4	6.50/16-6S	Own 8RC	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4 9	N	Own 21C	3	Own 8C	H½	H	3.73–4.27	Own 8RC	O4IH	178	259	Co	M2	40.06	5.92x2¼x15	T
	F-2																														
41	Cowl....8HD-84	1045	122	122	5700	2612	6.50/16-6	7.00/16-6S	Own 7HD	6–3 3x4 4	226	6.8	180	95–3300	4–2 87x4 8	N	Own 51Y	4	Own 8RD	SF	H	** –4.86	Own 8RD	O4IH	167	264	Co	M2	48.06	6x2¼x.19	T
42	Cowl....8RD-84	1075	122	122	5700	2652	6.50/16-6	7.00/16-6S	Own 8RD	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4 9	N	Own 51Y	4	Own 8RD	SF	H	** –4.86	Own 8RD	O4IH	167	264	Co	M2	48.06	6x2¼x.19	T
	F-3																														
43	Cowl....8HY-84	1120	122	122	6800	2847	7.00/17-6S	7.50/17-8S	Own 7HY	6–3 3x4 4	226	6.8	180	95–3300	4–2 87x4 8	N	Own 51Y	4	Own 8RY	SF	H	** –4.86	Own 8RY	O4IH	188	308	Co	M2	48.06	6x2¼x.19	T
44	Cowl....8RY-84	1150	122	122	6800	2887	7.00/17-6S	7.50/17-8S	Own 8RY	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4 9	N	Own 51Y	4	Own 8RY	SF	H	** –4.86	Own 8RY	O4IH	188	308	Co	M2	48.06	6x2¼x.19	T
	F-4																														
45	Cowl...8HTL-84	1175	134	134	10000	3182	7.00/20-8S	7.00/18-8	Own 7HT	6–3 3x4 4	226	6.8	180	95–3300	4–2 87x4 8	N	Own 41T	4	Own 7RTL	SF	H	5.14–5.86	Own 7RTL	O4IH	302	506	Co	TX	60.06	7x2¾x.21	T
46	Cowl...8RTL-84	1205	134	134	10000	3222	7.00/20-8S	7.00/18-8	Own 8RT	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4 9	N	Own 41T	4	Own 7RTL	SF	H	5.14–5.86	Own 7RTL	O4IH	302	506	Co	TX	60.06	7x2¾x.21	T
	F-5																														
47	Cowl....8HT-84	1220	134	134	14000	3658	6.50/20-6	7.50/20-8	Own 7HT	6–3 3x4 4	226	6.8	180	95–3300	4–2 87x4 8	N	Own 41T	4	Own 7RT	SF	H	5.14–6 67	Own 7RT	O4IH	302	506	Co	TX	60.06	7x2¾x.21	L
48	Cowl....8RT-84	1250	134	134	14000	3698	6.50/20-6	7.50/20-8	Own 8RT	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4 9	N	Own 41T	4	Own 7RT	SF	H	5.14–6 67	Own 7RT	O4IH	302	506	Co	TX	60.06	7x2¾x.21	L
49	Cowl...8HST-84	1250	158	158	14000	3748	6.50/20-6	7.50/20-8	Own 7HT	6–3 3x4 4	226	6.8	180	95–3300	4–2 87x4 8	N	Own 41T	4	Own 7RT	SF	H	5.14–6 67	Own 7RT	O4IH	302	506	Co	TX	84.06	7x2¾x.21*	LT
50	Cowl...8RST-84	1280	158	158	14000	3788	6.50/20-6	7.50/20-8	Own 8RT	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4 9	N	Own 41T	4	Own 7RT	SF	H	5.14–6 67	Own 7RT	O4IH	302	506	Co	TX	84.06	7–2¾x.21*	LT
	F-5 C.O.E.																														
51	Cab...8HOW-81	1605	110	110	14000	▲4108	6.50/20-6	7.50/20-8	Own 7HW	6–3 3x4 4	226	6.8	180	95–3300	4–2 87x4 8	N	Own 41T	4	Own 7RT	SF	H	5.14–6 67	Own 7RW	O4IH	302	506	Co	TX	60.06	7x2¼x.21*	LT
52	Cab...8ROW-81	1635	110	110	14000	▲4148	6.50/20-6	7.50/20-8	Own 8RW	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4 9	N	Own 41T	4	Own 7RT	SF	H	5.14–6 67	Own 7RW	O4IH	302	506	Co	TX	60.06	7x2¾x.21*	LT
53	Cab....8HW-81	1635	134	134	14000	▲4268	6.50/20-6	7.50/20-8	Own 7HW	6–3 3x4 4	226	6.8	180	95–3300	4–2 87x4 8	N	Own 41T	4	Own 7RT	SF	H	5.14–6 67	Own 7RW	O4IH	302	506	Co	TX	84.06	7.08x2.8x*	LT
54	Cab....8RW-81	1665	134	134	14000	▲4308	6.50/20-6	7.50/20-8	Own 8RW	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4 9	N	Own 41T	4	Own 7RT	SF	H	5.14–6 67	Own 7RW	O4IH	302	506	Co	TX	84.06	7.08x2.8x*	LT
55	Cab....8HSW-81	1665	158	158	14000	▲4368	6.50/20-6	7.50/20-8	Own 7HW	6–3 3x4 4	226	6.8	180	95–3300	4–2 87x4 8	N	Own 41T	4	Own 7RT	SF	H	5.14–6 67	Own 7RW	O4IH	302	506	Co	TX	108.1	7.08x2.8x*	LT
56	Cab....8RSW-81	1695	158	158	14000	▲4408	6.50/20-6	7.50/20-8	Own 8RW	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4 9	N	Own 41T	4	Own 7RT	SF	H	5.14–6 67	Own 7RW	O4IH	302	506	Co	TX	108.1	7.08x2.8x*	LT
	F-5 School Bus																														
57	Bus Cl..8HST-84	1315	158	158	12000	3855	6.50/20-6	7.00/20-8	Own 7HT	6–3 3x4 4	226	6.8	180	95–3300	4–2 87x4 8	N	Own 41T	4	Own 7RT	SF	H	5.14–6 67	Own 7RT	O4IH	302	506	Co	TX	128‡	7x2¾x.21*	LT
58	Bus Cl..8RST-84	1345	158	158	12000	3895	6.50/20-6	7.00/20-8	Own 8RT	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4 9	N	Own 41T	4	Own 7RT	SF	H	5.14–6 67	Own 7RT	O4IH	302	506	Co	TX	128‡	7x2¾x.21*	LT
59	Bus Cl..8H4T-84	1530	194	194	15000	4209	7.50/20-8	8.25/20-10	Own 7HT	6–3 3x4 4	226	6.8	180	95–3300	4–2 87x4 8	N	Own 41T	4	Own 7RT	SF	H	5.14–6 67	Own 7RTH	O4IH	302	506	Co	TX	164‡	7.08x2.8x*	LT
60	Bus Cl..8R4T-84	1560	194	194	15000	4249	7.50/20-8	8.25/20-10	Own 8RT	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4.9	N	Own 41T	4	Own 7RT	SF	H	5.14–5.67	Own 7RTH	O4IH	302	506	Co	TX	164‡	7.08x2.8x*	LT
	F-6																														
61	Cowl..8HTH-84	1610	134	134	15500	4024	7.50/20-8	8.25/20-10	Own 7HT	6–3 3x4 4	226	6.8	180	95–3300	4–2 87x4 8	N	Own 41T	4	Own 7RTM■	SF	H	5.83–8.11	Own 7RTH	O4IHV	302	506	Co	TX	60.06	7.08x2.8x*	LT
62	Cowl..8RTH-84	1640	134	134	15500	4064	7.50/20-8	8.25/20-10	Own 8RT	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4 9	N	Own 41T	4	Own 7RTM■	SF	H	5.83–8.11	Own 7RTH	O4IHV	302	506	Co	TX	60.06	7.08x2.8x*	LT
63	Cowl..8HSTH-84	1640	158	158	15500	4124	7.50/20-8	8.25/20-10	Own 7HT	6–3 3x4 4	226	6.8	180	95–3300	4–2 87x4 8	N	Own 41T	4	Own 7RTM■	SF	H	5.82–8.11	Own 7RTH	O4IHV	302	506	Co	TX	84.06	7.08x2.8x*	LT
64	Cowl..8RSTH-84	1670	158	158	15500	4164	7.50/20-8	8.25/20-10	Own 8RT	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4.9	N	Own 41T	4	Own 7RTM■	SF	H	5.83–8.11	Own 7RTH	O4IHV	302	506	Co	TX	84.06	7.08x2.8x*	LT
	F-6 C.O.E.																														
65	Cab..8HOWH-81	1990	110	110	16000	▲4524	7.50/20-8	8.25/20-10	Own 7HW	6–3 3x4 4	226	6.8	180	95–3300	4–2 87x4 8	N	Own 41T	4	Own 7RTM■	SF	H	5.83–8.11	Own 7RW	O4IHV	302	506	Co	TX	60.06	7x2¾x.21*	LT
66	Cab..8ROWH-81	2020	110	110	16000	▲4564	7.50/20-8	8.25/20-10	Own 8RW	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4.9	N	Own 41T	4	Own 7RTM■	SF	H	5.83–8.11	Own 7RW	O4IHV	302	506	Co	TX	60.06	7x2¾x.21*	LT
67	Cab...8HWH-81	2020	134	134	16000	▲4684	7.50/20-8	8.25/20-10	Own 7HW	6–3 3x4 4	226	6.8	180	95–3300	4–2 87x4 8	N	Own 41T	4	Own 7RTM■	SF	H	5.83–8.11	Own 7RW	O4IHV	302	506	Co	TX	84.06	7.08x2.8x*	LT

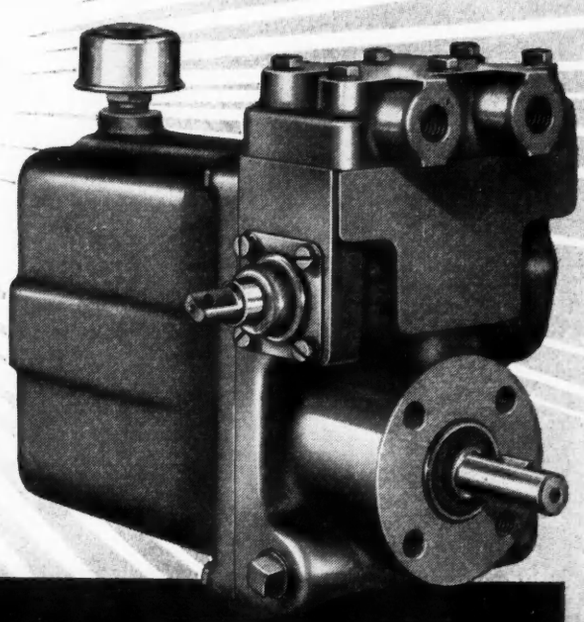
(Turn to Page 98, please)

†—Front only: Rear 10.00/20.
△—Front only: Rear 8.25/20.
‡—For shorter wheelbases 8½x2⅞x⅝.
♦—Cowl to Axle.
●—For shorter wheelbases—10x3½x¼.
▲—Auxiliary trans. Spicer 6231B, three forward speeds.
§—Auxiliary trans. Spicer 703F, three forward speeds.
▲—Weights apply to cab chassis models.
■—Two speed rear axle with vacuum shift.
*—Reinforcement 6.58x2.21x.125, Inside Siderail from Front to Rear Spring Brackets.

"PACKAGED HYDRAULICS"

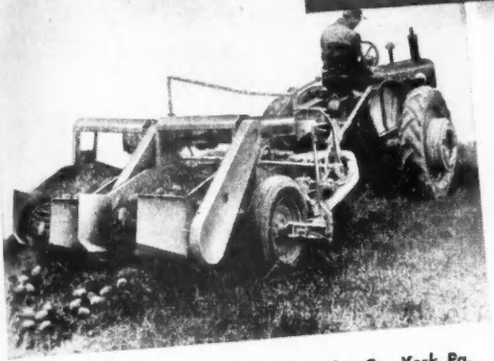
MANY ADVANTAGES

MANY USES



VICKERS POWER PACK

AGRICULTURE



"Iron Age" Potato Digger of A. B. Farquhar Co., York, Pa.

AUTOMOTIVE

"Hydraul-Lift" Tail Gate of Cemco Industries, Inc., Galion, O.

CONSTRUCTION

"Profit Mover" of Construction Products Corp., Lynwood, Calif.

The Vickers Hydraulic Power Pack is a compact, self-contained hydraulic system which meets a wide variety of control needs in mobile equipment. It provides the machinery equipment manufacturer with a quick, easy, low cost installation which assures his customers of long trouble free service.

Tractors, planters, cultivators, plows, stackers, loaders, harvesters, rakes, mowers, etc., are among the many agricultural uses for the Vickers Hydraulic Power Pack. On commercial vehicles, it saves time and labor by actuating dump hoists, lifting tail gates and other miscellaneous operations. In the construction industry, light duty scrapers and bulldozers, fork lift trucks, loaders, scoops, snow plows, tractors, etc., are conveniently and economically controlled by the Vickers Hydraulic Power Pack. It saves labor, speeds operation, cuts costs.

The Vickers Hydraulic Power Pack is a compact package weighing only 55 pounds. It incorporates an oil tank, filter, vane pump, overload relief valve and operating valve. Write for Bulletin 46-48a.

VICKERS Incorporated

DIVISION OF THE SPERRY CORPORATION

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Application Engineering Offices: **ATLANTA • CHICAGO • CINCINNATI • CLEVELAND DETROIT • LOS ANGELES • NEWARK • PHILADELPHIA • PITTSBURGH • ROCHESTER ROCKFORD • ST. LOUIS • SEATTLE • TULSA • WASHINGTON • WORCESTER**

(Continued from Page 96)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES (D-dual rear S-single rear) Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number, Diameter and Length	Governor Standard	TRANSMISSION Make and Model	TRANSMISSION Forward Sp'ds	REAR AXLE Make and Model	REAR AXLE Gear and Type	REAR AXLE Drive & Torque	REAR AXLE Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operation	BRAKES SERVICE Lining Area	BRAKES SERVICE Drum Area	BRAKES SERVICE Drum Material	BRAKES Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	FRAME Type
	F-6 C.O.E. Cont'd																														
1	Cab...8RWH-81	2050	134	134	16000	▲4724	7.50/20-8	8.25/20-10	Own 8RW	8-3⅛x3¾	239	6.8	180	100–3800	3–2.49x4.9	N	Own 41T	4	Own 7RTM■	SF	H	5.83–8.11	Own 7RW	O41HV	302	506	Co	TX	84.06	7.08x2.8x¼*	LT
2	Cab..8HSWH-81	2050	158	158	16000	▲4784	7.50/20-8	8.25/20-10	Own 7HW	6-3.3x4.4	226	6.8	180	95–3300	4–2.87x4.8	N	Own 41T	4	Own 7RTM■	SF	H	5.83–8.11	Own 7RW	O41HV	302	506	Co	TX	108.17	7.08x2.8x¼*	LT
3	Cab..8RSWH-81	2080	158	158	16000	▲4824	7.50/20-8	8.25/20-10	Own 8RW	8-3⅛x3¾	239	6.8	180	100–3800	3–2.49x4.9	N	Own 41T	4	Own 7RTM■	SF	H	5.83–8.11	Own 7RW	O41HV	302	506	Co	TX	108.17	7.08x2.8x¼*	LT
	F-7																														
4	Cowl....8EQ-84	2685	135	135	19000	5388	8.25/20-10	9.00/20-10	Own 8EQ	8-3½x4⅛	337	6.4	255	145–3600	3–2.87x5.0	Y	Own 7EQ	5	Own 7EQ	Hy	H	6.8	Own 7EQ	O41HV	350	583	Co	TX	61.06	9x3x.25	T
5	Cowl....8E9Q-84	2735	159	159	19000	5498	8.25/10-10	9.00/20-10	Own 8EQ	8-3½x4⅛	337	6.4	255	145–3600	3–2.87x5.0	Y	Own 7EQ	5	Own 7EQ	Hy	H	6.8	Own 7EQ	O41HV	350	583	Co	TX	85.06	9x3x.25	T
6	Cowl....8E5Q-84	2785	195	195	19000	5618	8.25/20-10	9.00/20-10	Own 8EQ	8-3½x4⅛	337	6.4	255	145–3600	3–2.87x5.0	Y	Own 7EQ	5	Own 7EQ	Hy	H	6.8	Own 7EQ	O41HV	350	583	Co	TX	121.1	9x3x.25	T
	F-8																														
7	Cowl...8EQH-84	3335	135	135	21500	5944	9.00/20-10	10.0/20-12	Own 8EQ	8-3½x4⅛	337	6.4	255	145–3600	3–2.87x5.0	Y	Own 7EQH	5	Own 7EQH■	SF	H	6.5 –8.87	Own 7EQ	O41HV	485	729	C	TX	61.06	9x3x.25	T
8	Cowl..8E9QH-84	3385	159	159	21500	6054	9.00/20-10	10.0/20-12	Own 8EQ	8-3½x4⅛	337	6.4	255	145–3600	3–2.87x5.0	Y	Own 7EQH	5	Own 7EQH■	SF	H	6.5 –8.87	Own 7EQ	O41HV	485	729	C	TX	85.06	9x3x.25	T
9	Cowl..8E5QH-84	3435	195	195	21500	6174	9.00/20-10	10.0/20-12	Own 8EQ	8-3½x4⅛	337	6.4	255	145–3600	3–2.87x5.0	Y	Own 7EQH	5	Own 7EQH■	SF	H	6.5 –8.87	Own 7EQ	O41HV	485	729	C	TX	121.1	9x3x.25	T
10	Intern'l (2)...KB-1	960	113	125	4400	2250	6.00/16-4	7.00/16	Own GRD214	6-3⅜x4½	213	6.3	160	82–3400	4–2⅝x6‡‡	N	Own HDS-B	3	Own R1050	S½	H	3.72–5.11	Own F50	L41H	164	316	e	FX	38	6x2¼x1⅛	T
11	.....KB-1M	875	102	113	4600	2150	6.00/16-4	6.50/16-6	Own GRD214	6-3⅜x4½	213	6.3	160	82–3400	4–2⅝x6‡‡	N	O SA-HDS-B	3	Own R1050	S½	H	3.72–5.11	Own F150	L41H	164	316	e	FX	.....	6½x2¼x⅛‡‡	T
12	.....KB-2	1010	125	125	5200	2285	6.00/16-4	7.00/16-6	Own GRD214	6-3⅜x4½	213	6.3	160	82–3400	4–2⅝x6‡‡	N	Own HDS-B	3	Own R1050	S½	H	3.72–5.11	Own F50	L41H	164	316	e	FX	50	6⅜x2¼x⅜	T
13	.....KB-3	1150	130	....	6650	3000	7.00/16-6	7.50/16-6	Own GRD214	6-3⅜x4½	213	6.3	160	82–3400	4–2⅝x6‡‡	N	Own HDS-B	3	Own R1150	SF	H	4.22–5.28	Own F150	L41H	195	367	e	FX	55	6½x2¼x⅜‡‡	T
14	.....KB-3M	1050	102	113	7000	2585	7.00/16-6	7.50/16-8	Own GRD214	6-3⅜x4½	213	6.3	160	82–3400	4–2⅝x6‡‡	N	Own H41B	4	Own R1150	SF	H	4.22–5.28	Own F150	L41H	221	367	e	FX	.....	6½x2¼x⅜‡‡	T
15	(a).....KB-5	1320	135	177	13500	3705	6.50/20D	8.25/20	O-GRD 233	6-3⅜x4½	233	6.3	181	93–3400	4–2⅝x6‡‡	N	Own H41B	4	Own R1360	SF	H	5.28–7.16	Own F350	LH41H	294	509	e	FX	60	8x3x⅜	T
16	(a).....KB-6	1775	134	176	14500	4625	7.00/20D	8.25/20	Own BLD250	6-3⅜x4½	251	6.3	200	100–3200	4–2⅝x5‡‡	N	Own WT97A	5	Own R1560	SF	H	5.62–7.16	Own 16F470	LH41HV	305	539	e	FX	60	8¼x3x⅜	T
17	(a).....KB-7	2350	134	176	16500	5055	7.50/20D	9.00/20	O-BLD 269	6-3⅜x4½	269	6.3	222	100–3000	4–2.7x5‡‡	N	Own F51	5	Own R1560	SF	H	6.50–7.16	Own F470	LH41HV	368	633	e	FX	60	8¼x3x⅜	T
18	(a).....KB-8	3400	137	197	20000	6580	9.00/20D	10.00/24	O-RED 361	6-4½x4½	361	6.3	282	120–3000	7–3¼x10‡‡	Y	Own F51	5	Own R1572	SF	H	6.43–8.51	Own F553	LH41HV	407	709	e	FX	60	8‡‡x3½x⅜	T
19	(a).....KB-10	4150	149	197	22500	7405	10.00/20D	11.00/24	Own RED401	6-4½x5	401	6.3	318	140–2800	7–3¼x10‡‡	Y	Own F52	5	Own R1676	SF	H	6.43–8.05	Own F653	LH41HV	484	829	e	FX	72	9¼x3½x⅜	T
20	(a).....KB-11	5600	149	197	27000	8430	10.00/20D	12.00/24	O-RED 450	6-4½x5	450	6.3	361	148–2600	7–3¼x10‡‡	Y	Own F54	5	Tim R100	2SF	H	6.42–8 05	Own F750	WW41A	746	1030	G	FX	72	10x3½x⅜	T
21	(a).....KB-12	6550	155	215	28500	9175	11.00/20	12.00/20	O-Con. R6586	6-4½x5⅝	586	6.0	475	200–2600	7–3¼x13½	Y	Own F55	5	Tim R100	2F	H	** –6.42	Own F750	BW41A	746	....	G	FX	66	10x3½x⅜	C
22	(a).....KBR-14	7150	161	215	32000	10100	11.00/20	12.00/24	O-Con. R6586	6-4½x5⅝	586	6.0	475	200–2600	7–3¼x13½	Y	Own F55B	5	Tim U200P	2F	H	**–7.08	Own F750	BW41A	746	....	G	FX	72	10x3½x⅜	L
23	.....W-3042-L	9900	179	227	30000	12530	10.00/20	11.00/22	Cum HB600	6-5⅝x5½	672	17	554	254–2600	7–3¾x15¾	Y	Spl 7741	4	Tim R-100	2F	H	** –6.42	Own 86303	BW41A	690	....	G	FX	84	10x3½x⅜	C
24	.....W-4042-OH	11250	170	230	40000	13115	10.00/20	14.00/24	Cum HB600	6-4¾x6	672	17	492	150–1800	7–4½x..	Y	Spl 7741	4	Tim 79750PA	2F	H	7.69–11.36	Own 82F	BW41A	656	....	G	FX	72	10x3½x⅜	C
25	Kenworth(D)..521	.....	161	215	35000	12200	10.00/20	11.00/22	Cum HB6	6-4¾x6	672	17.	500	150–1800	7–4½x16½	Y	BL 8241	4	Tim U200P	DR	H	6.42–7.84	Tim 36000TW	Ws41A	752	1050	a	TD	72	9¼x3¼x⅜	C
26	585	.....	150	215	30000	10130	10.00/20	11.00/22	Bu LO525	6-4½x5½	525	5.5	385	150–2200	7–3x11½	Y	Fu 5A620	5	Tim U200P	....	....	6.14	Tim 36000TW	Ws41A	752	....	a	....	70	9½x3¼x⅜	....
27	Linn.....L-2	.....	120	....	9000	6000	7.50/20S	8.25/20S	Her QXC3	6-3⅝x4½	221	...	159	77–3200	7–1⅝x10⅛	N	WGT9	4	Own 600	N	N	None	Tim F30B28H	L41H	306	478	a	T	.....	None	....
28	.....L-4	.....	156	....	9200	6200	7.50/20S	8.25/20	Her QXC3	6-3⅝x4½	221	...	159	77–3200	7–1⅝x10⅛	N	WGT9	4	Own 600	N	N	None	Tim F30B28H	L41H	306	478	a	X	.....	None	....
29	.....L-6	.....	169	....	12700	7700	7.50/20D	8.25/20	Her JXE3	6-3⅜x4½	245	6.5	184	91–3200	7–2½x10‡‡	N	WGT9	4	Own 600T	N	N	None	Tim F30B28H	L61H	486	744	a	X	.....	None	....
30	.....L-8	.....	205	....	12900	7900	7.50/20D	8.25/20	Her JXE3	6-3⅜x4½	245	6.5	184	91–3200	7–2½x10‡‡	N	WGT9	4	Own 600T	N	N	None	Tim F30B28H	L6IH	486	744	a	X	.....	None	....
31	Mar. Her...DVL-4	.....	90	118	$6750	.....	7.50/16S	8.25/18S	Willys MB	4-3⅛x4⅛	134	6.4	105	60–4000	3–2.33x5.48	Y	Own	3	(Front Drive)	.....	.....	7.10	Own	4IH	202	327	M2	.....	.....	None	....
32	Peterbilt(D)270DD	.....	165	Opt	35000	12500	10.00/20D	11.00/22	Cum HB600	6-4¾x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 7741	12	U-200P	2F	R	** –6.42	Tim 36000W	Ws41A	800	1250	a	FD	80½	10⅛x3½x⅜	TL
33	Reo.....D-19XA	.....	125	125	8000	4340▲	7.00/20S	8.25/20S	Own GC 245	6-3½x4¼	245	6.2	192	89–3100	7–2⅝x10.7	Y	WG T97	4	Tim 53547	SF	H	5.66–6.67	Tim 30000	T41H▼	310	482	var	TX	60	9x3x¼	T
34	.....D-19A	.....	125	125	14000	4740▲	7.50/20	8.25/20	Own GC 245	6-3½x4¼	245	6.2	192	89–3100	7–2⅝x10.7	Y	WG T97	4	T53547–E300	SFd	H	5.66–6.67*	Tim 30000	T41VH▼	310	482	var	TX	60	9x3x¼	T
35	.....D-19T	.....	125	125	14000	5330▲	8.25/20	8.25/20	Own GC 245	6-3½x4¼	245	6.2	192	89–3100	7–2⅝x10.7	Y	WG T97	4	Tim E300	HFd	H	6.13&8.10	Tim 30000	T41VH▼	310	482	var	TX	60	9x3x¼	T
36	.....D-19B	.....	150	150	14000	4900▲	7.50/20	8.25/20	Own GC 245	6-3½x4¼	245	6.2	192	89–3100	7–2⅝x10.7	Y	WG T97	4	T53547–E300	SFd	H	5.66–6.67*	Tim 30000	T41VH▼	310	482	var	TX	80	9x3x¼	T
37	.....D-19C	.....	165	165	14000	5090▲	7.50/20	8.25/20	Own GC 245	6-3½x4¼	245	6.2	192	89–3100	7–2⅝x10.7	Y	WG T97	4	T53547–E300	SFd	H	5.66–6.67*	Tim 30000	T41VH▼	310	482	var	TX	100	9x3x¼	T
38	.....D-19L	.....	187	187	14000	5080▲	8.25/20	8.25/20	Own GC 245	6-3½x4¼	245	6.2	192	89–3100	7–2⅝x10.7	Y	WG T97	4	T53547–E300	SFd	H	5.66–6.67*	Tim 30000	T41VH▼	310	482	var	TX	123	9x3x¼	T
39	.....D-21A	.....	125	125	15500	4920▲	7.50/20	8.25/20	Own GC 288	6-3½x5	288	6.2	225	96–3000	7–2⅝x10.7	Y	WG T97	4	Tim E100	HF	H	5.66–6.2	Tim 31013	T41VH▼	310	482	var	TX	60	9x3x¼	T
40	.....D-21T	.....	125	125	15500	5380▲	8.25/20	8.25/20	Own GC 288	6-3½x5	288	6.2	225	96–3000	7–2⅝x10.7	Y	WG T97	4	Tim E300	HFd	H	6.13&8.10	Tim 31013	T41VH▼	310	482	var	TX	60	9x3x¼	T
41	.....D-21B	.....	150	150	15500	5230▲	8.25/20	8.25/20	Own GC 288	6-3½x5	288	6.2	225	96–3000	7–2⅝x10.7	Y	WG T97	4	Tim E100	HF	H	5.66–6.2	Tim 31013	T41VH▼	310	482	var	TX	85	9x3x¼	T
42	.....D-21C	.....	165	165	15500	5270▲	8.25/20	8.25/20	Own GC 288	6-3½x5	288	6.2	225	96–3000	7–2⅝x10.7	Y	WG T97	4	Tim E100	HF	H	5.66–6.2	Tim 31013	T41VH▼	310	482	var	TX	100	9x3x¼	Tf
43	.....D-21R-A	.....	130	130	18000	6040▲	9.00/20	9.00/20	Own GC 288	6-3½x5	288	6.2	225	96–3000	7–2⅝x10.7	Y	Cla 205V–VO	5	Tim H200–300	HFd	H	7.3*	Tim 31104	T41VH▼	344	584	var	TX	65	9x3x¼	T
44	.....D-21R-T	.....	130	130	18000	6380▲	9.00/20	9.00/20	Own GC 288	6-3½x5	288	6.2	225	96–3000	7–2⅝x10.7	Y	Cla 205V–VO	5	Tim H300	HFd	H	6.13&8.15	Tim 31104	T41VH▼	344	584	var	TX	65	9x3x¼	T
45	.....D-21R-B	.....	150	150	18000	6080▲	9.00/20	9.00/20	Own GC 288	6-3½x5	288	6.2	225	96–3000	7–2⅝x10.7	Y	Cla 205V–VO	5	Tim H100–300	HFd	H	5.28–6.8*	Tim 31104	T41VH▼	344	584	var	TX	85	9x3x¼	T
46	.....D-21R-C	.....	165	165	18000	6180▲	9.00/20	9.00/20	Own GC 288	6-3½x5	288	6.2	225	96–3000	7–2⅝x10.7	Y	Cla 205V–VO	5	Tim H100–300	HFd	H	5.28–6.8*	Tim 31104	T41VH▼	344	584	var	TX	100	9x3x¼	Tf
47	.....D-21R-L	.....	185	185	18000	6430▲	9.00/20	9.00/20	Own GC 288	6-3½x5	288	6.2	225	96–3000	7–2⅝x10.7	Y	Cla 205V–VO	5	Tim H100–300	HFd	H	5.28–6.8*	Tim 31104	T41VH▼	344	584	var	TX	120	9 ⅛x3 ⅛x ⅜	Tf
48	.....D-22A	.....	130	130	20500	6220▲	9.00/20	9.00/20	Own GC 310	6-3½x5	310	6.2	243	101–3000	7–2⅝x10.7	Y	Cla 205V–VO	5	Tim H300	HFd	H	6.13&8.15	Tim 31104	T41VH▼	344	584	var	TX	65	9 ⅛x3 ⅛x ⅜	T
49	.....D-22T	.....	130	130	20500	6630▲	9.00/20	9.00/20	Own GC 310	6-3½x5	310	6.2	243	101–3000	7–2⅝x10.7	Y	Cla 205V–VO	5	Tim H300	HFd	H	6.13&8.15	Tim 31104	T41VH▼	344	584	var	TX	65	9 ⅛x3 ⅛x ⅜	T
50	.....D-22B	.....	150	150	20500	6140▲	9.00/20	9.00/20	Own GC 310	6-3½x5	310	6.2	243	101–3000	7–2⅝x10.7	Y	Cla 205V–VO	5	Tim H Series	HFd	H	6.16–7.3*	Tim 31104	T41VH▼	344	584	var	TX	85	9 ⅛x3 ⅛x ⅜	T
51	.....D-22C	.....	165	165	20500	6380▲	9.00/20	9.00/20	Own GC 310	6-3½x5	310	6.2	243	101–3000	7–2⅝x10.7	Y	Cla 205V–VO	5	Tim H Series	HFd	H	6.16–6.8*	Tim 31104	T41VH▼	344	584	var	TX	100	9 ⅛x3 ⅛x ⅜	Tf
52	.....D-22L	.....	185	185	20500	6430▲	9.00/20	9.00/20	Own GC 310	6-3½x5	310	6.2	243	101–3000	7–2⅝x10.7	Y	Cla 205V–VO	5	Tim H100–300	HFd	H	6.16*	Tim 31104	T41VH▼	344	584	var	TX	120	9 ⅛x3 ⅛x ⅜	Tf
53	.....D-22R-B	.....	150	150	20500	6480▲	9.00/20	9.00/20	Own GC 310	6-3½x5	310	6.2	243	101–3000	7–2⅝x10.7	Y	Cla 205V–VO	5	Tim L100–200	HF2	H	6.83–8.22	Tim 32500	T41VH▼	370	640	var	TX	85	9 ⅛x3 ⅛x ⅜	T
54	.....D-23T	.....	130	130	23000	8000▲	9.00/20	11.00/20	Con T–6427	6-4¼x4 7/8	427	6.2	336	153–2800	7–2⅞x13.6	Y	Cla 270V–VO	5	Tim L100–300	HFd	H	5.28–6.16*	Tim 32500	Ws41A	514	644	var	TX	65	9 ⅛x3 ⅛x ⅜	T
55	.....D-23L	.....	185	185	23000	7900▲	10.00/20	11.00/20	Con T–6427	6-4¼x4 7/8	427	6.2	336	153–2800	7–2⅞x13.6	Y	Cla 270V–VO	5	Tim L100	HF	H	6.16	Tim 32500	Ws41A	514	644	var	TX	120	9 ⅛x3 ⅛x ⅜	Tf
56	.....D-23R-T	.....	130	130	25000	8580▲	10.00/20	11.00/20	Con T–6427	6-4¼x4 7/8	427	6.2	336	153–2800	7–2⅞x13.6	Y	Cla 270V–VO	5	Tim Q100–300	HFd	H	5.28–6.16*	Tim 35011	Ws41A	638	934	var	TX	65	9 ⅛x3 ⅛x ⅜	T
57	.....D-23R-B	.....	150	150	25000	8570▲	10.00/20	11.00/20	Con T–6427	6-4¼x4 7/8	427	6.2	336	153–2800	7–2⅞x13.6	Y	Cla 270V–VO	5	Tim S200	HF2	H	7.84*	Tim 35011	Ws41A	712	1038	var	TX	85	9 ⅛x3 ⅛x ⅜	T
58	.....D-23R-BL	.....	150	150	25000	9050▲	10.00/20	11.00/20	Con T–6427	6-4¼x4 7/8	427	6.2	336	153–2800	7–2⅞x13.6	Y	Cla 270VO&c	5	Tim S200	HF2	H	7.84*	Tim 35011	Ws41A	712	1038	var	TD	85	9 ⅛x3 ⅛x ⅜	T
59	.....D-23R-L	.....	185	185	25000	8300▲	10.00/20	11.00/20	Con T–6427	6-4¼x4 7/8	427	6.2	336	153–2800	7–2⅞x13.6	Y	Cla 270V–VO	5	Tim Q100–300	HFd	H	6.16*	Tim 35011	Ws41A	638	934	var	TX	120	9 ⅛x3 ⅛x ⅜	Tf
60	.....30-A	.....	145	145	32000	11000▲	11.00/20	11.00/24	Con R–6513	6-4 1/2x5 5/8	513	5.9	400	173–2800	7–3¼x14.7	Y	Spi6252A-534	5	TS300–U200	HFd	H	7.84*	Tim 36000	Ws41A	722	1038	var	TI	67	10⅛x3 ⅛x ⅜	T
61	.....30-B	▲165	165	165	32000	11750▲	11.00/20	11.00/24	Con R–6513	6-4 1/2x5 5/8	513	5.9	400	173–2800	7–3¼x14.7	Y	Spi6252A-534	5	TS300–U200	HFd	H	7.84*	Tim 36000	Ws41A	722	1038	var	TI	67	10⅛x3 ⅛x ⅜	T
62	.....31-A	▲145	145	145	32000	11000▲	11.00/20	11.00/24	Con R–6602	6-4 1/2x5 5/8	602	5.9	464	202–2800	7–3¼x14.7	Y	Spi6252A-534	5	TS300–U200	HFd	H	7.84*	Tim 36000	Ws41A	722	1038	var	TI	67	10⅛x3 ⅛x ⅜	T
63	.....31-B	▲165	165	165	32000	11750▲	11.00/20	11.00/24	Con R–6602	6-4 1/2x5 5/8	602	5.9	464	202–2800	7–3¼x14.7	Y	Spi6252A-534	5	TS300–U200	HFd	H	7.84*	Tim 36000	Ws41A	722	1038	var	TI	87	10⅛x3 ⅛x ⅜	T
	School Buses																														
64	.....C119-31	.....	152	152	.....	.....	7.00/20	7.00/20	Own GC 245	6-3½x4¼	245	6.2	192	89–3100	7–2⅝x10.7	Y	Cla 185F	4	Tim 53547	SF	H	6.16	Tim 30000	T41VH▼	310	482	var	TX	.....	9x3x1¼	T
65	.....C119L-43	.....	188	188	.....	.....	7.50/20	7.50/20	Own GC 245	6-3½x4¼	245	6.2	192	89–3100	7–2⅝x10.7	Y	Cla 185F	4	Tim 53547	SF	H	6.67	Tim 31013	T41VH▼	310	482	var	TX	.....	9x3x1¼	T
66	.....C119LS-49	.....	206	206	.....	.....	7.50/20	7.50/20	Own GC 245	6-3½x4¼	245	6.2	192	89–3100	7–2⅝x10.7	Y	WG T97	4	Tim 53547	SF	H	6.67	Tim 31013	T41VH▼	310	482	var	TX	.....	9 ⅛x3 ⅛x ⅜	T
67	.....C121-49	.....	206	206	.....	.....	8.25/20	8.25/20	Own GC 288	6-3½x5	288	6.2	225	96–3000	7–2⅝x10.7	Y	Cla 231F	4	Tim E100	HyF	H	6.80	Tim 31104	T41VH▼	314	532	var	TX	.....	9 ⅛x3 ⅛x ⅜	T
68	.....C121S-55	.....	224	224	.....	.....	8.25/20	8.25/20	Own GC 288	6-3½x5	288	6.2	225	96–3000	7–2⅝x10.7	Y	WG T97	4	Tim E100	HyF	H	6.80	Tim 31104	T41VH▼	314	532	var	TX	.....	9 ⅛x3 ⅛x ⅜	T
69	.....C122-55	.....	224	224	.....	.....	9.00/20	9.00/20	Own GC 310	6-3½x5	310	6.2	243	101–3000	7–2⅝x10.7	Y	Cla 231F	4	Tim H100	HyF	H	7.20	Tim 31104	T41VH▼	344	584	var	TX	.....	9 ⅛x3 ⅛x ⅜	T
70	.....C-122-L	.....	252	252	.....	.....	9.00/20	9.00/20	Own GC 310	6-3½x5	310	6.2	243	101–3000	7–2⅝x10.7	Y	Cla 231F	4	Tim H100	HyF	H	7.2	Tim 32500	T41VH	344	588	var	TX	.....	9 ⅛x3 ⅛x ⅜	T

▲—Includes Cab.
*—2-Speed Axle Available.
▼—Lockheed Type Front and Timken Dual Primary Rear Brakes.
■—Two speed rear axle with vacuum shift.
‡—6231A Spicer Auxiliary Transmission.
▲—8031 F-O Spicer Transmission available.
▲—Special W.B.'s available on request.
¢—8200 for 8.25/18 tires.

(Turn to Page 100, please)

Anson L. Johnson, Thompson Trophy Winner

1948 NATIONAL AIR RACES, CLEVELAND AIRPORT

SEPTEMBER 6

300 miles—20 laps of a 15-mile quadrangular course—average speed of 383.767 miles per hour

THE PILOT: Anson L. Johnson of Miami Springs, Florida, former lieutenant in the U. S. Air Forces. During War II, he served as ferry and transport pilot. He learned to fly at the age of nineteen. Now twenty-eight years old, he is a pilot for National Air Lines.

THE PLANE: The ship flown by Johnson was a converted P-51 Mustang fighter powered by a Packard-Merlin engine. It is Johnson's own, readied for the "Thompson" by himself—he had no sponsor.

THE EVENT: The Thompson Trophy Race, initiated in 1929, has become an institution. It is the recognized world-classic for air speedsters around a closed course. To fly this tight closed course is a gruelling test of both plane and pilot. It calls for skill, daring and judgment. Pilots must wear shoulder straps, crash helmets and parachutes.

THE PURPOSE: The National Air Races is a great proving ground for innovations in wing and motor. The "Thompson", because it demands constant banks, is a revealing test of a plane's speed and stamina under conditions that require utmost maneuverability with wide-open throttle. Just how severe is witnessed by the fact that 7 out of 10 entries in the 1948 event were forced out under a blistering 400 miles per hour pace; the fastest single lap was 413.097 miles per hour. The "Thompson" is dedicated to the development of faster, *safer* planes—the combination that will hold our Country's commercial and military leadership in the air.

TROPHY AND AWARDS: The Thompson Trophy itself is of bronze, 40 inches high, designed by the noted sculptor, Walter A. Sinz. This prized trophy is engraved with each winner's name and average speed, and held by him for one year. For permanent possession pilots who finish first, second and third receive gold, silver and bronze plaques. The prize purse for 1948 was $40,000.00, of which Johnson received $16,500.00.

THOMPSON TROPHY WINNERS:
1929—Davis, 194.90 mph • 1930—Holman, 201.91 mph • 1931—Bayles, 236.23 mph • 1932 Doolittle, 252.68 mph 1933—Wedell, 237.95 mph • 1934—Turner, 248.12 mph • 1935—Neumann, 220.19 mph • 1936—Detroyat, 264.26 mph • 1937—Kling, 256.91 mph 1938—Turner, 283.41 mph • 1939—Turner, 282.53 mph • *1946*—(Piston Engines) Johnston, 373.90 mph • (Jet Engines) Lundquist, 515.85 mph • *1947*—(Piston Engines) Cleland, 396.13 mph • (Jet Engines) Petit, 500.70 mph.

Thompson Products, Inc.

CLEVELAND • DETROIT LOS ANGELES • ST. CATHARINE, CANADA

MANUFACTURERS OF PRECISION AUTOMOTIVE AND AIRCRAFT PARTS

(Continued from Page 98)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Size Optional (Duals as noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number, Diameter and Length	Governor Standard	TRANSMISSION Make and Model	Forward Sp'ds	REAR AXLE Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range to High	FRONT AXLE Make and Model	BRAKES SERVICE Make	Location	Type	Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimension (Min. Std. W. B.)	FRAME Side Rail Dimensions	Type
1	Sterling . . . HD97		148	175	24000	9150	9.00/20	11.00/20	Wau 6MZA	6–4¼x4¾	404	5.6	290	130–3000	7–2⅝x12½	Y	Fu 5A43	5	Tim Q100DPH	FHy	R 5.29–7.80	Tim 35011H	T4IHV	524	926	A	TX	67	9x7x¼	A
2	. . . . . HD105		148	175	24000	9550	10.00/20	11.00/22	Wau 6MZA	6–4¼x4¾	404	5.6	290	130–3000	7–2⅝x12½	Y	Fu 5A43	5	Tim R100DPH	FHy	R 5.29–7.40	Tim 35011H	T4IHV	524	926	A	TX	67	9x3¼x¼	A
3	. . . . . HD115		148	175	32000	10650	10.00/20	11.00/24	Wau 6SRKR	6–4⅝x5½	517	5.5	368	125–2250	7–3x13⅞	Y	Fu 5A62	5	Tim 8200P	2F	R 6.42–9.83	Tim 36000TW	Ws4IA	722	1054	A	TX	67	9x3¼x¼	A
4	. . . . . HD145		158	185	36000	11250	11.00/20	12.00/24	Wau 6SRKR	6–4⅝x5½	517	5.5	368	125–2250	7–3x13⅞	Y	Fu 5A62	5	Tim 79721W	2F	R 7.69–11.36	Tim 36000TW	Ws4IA	670	1118	A	TX	67	9¼x3½x¾	A
5	(D) . . . HD115H		158	185	32000	11950	10.00/20	11.00/24	Cum HB600	6–4⅞x6	672	17	500	150–1800	7–4½x16½	Y	Fu 4B86	4	Tim 8200P	2F	R 6.42–9.83	Tim 36000TW	Ws4IA	722	1054	A	TX	68	9x3¼x¼	A
6	(D) . . . HD145H		158	185	36000	12550	11.00/20	12.00/24	Cum HB600	6–4⅞x6	672	17	500	150–1800	7–4½x16½	Y	Fu 4B86	4	Tim 79721W	2F	R 7.69–11.36	Tim 36000TW	Ws4IA	670	1118	A	TX	68	9¼x3½x¾	A
7	. . . . . HC97		148	175	24000	9200	9.00/20	11.00/20	Wau 6MZA	6–4¼x4¾	404	5.6	290	130–3000	7–2⅝x12½	Y	Fu 5A43	5	Own 97H	CD	R 6.70–10.82	Tim 35011H	T4IHV	518	852	A	TX	67	9x7x¼	A
8	. . . . . HC105		148	175	28000	9700	10.00/20	11.00/22	Wau 6MZA	6–4¼x4¾	404	5.6	290	130–3000	7–2⅝x12½	Y	Fu 5A43§	15	Own 137H	CD	R 6.70–10.82	Tim 35011H	TL4IHV	540	842	A	TX	67	9x3¼x¼	A
9	. . . . . HC115		148	175	32000	10350	10.00/20	11.00/24	Wau 8RKR	6–4⅝x5½	517	5.5	368	125–2250	7–3x13⅞	Y	Fu 5A62§	15	Own 137W	CD	R 6.70–10.82	Tim 36000TW	Ws4IA	648	1064	A	TX	67	9x3¼x¼	A
10	. . . . . HC144		148	175	36000	11250	10.00/22	12.00/24	Wau 6SRKR	6–4⅝x5½	517	5.5	368	125–2250	7–3x13⅞	Y	Fu 5A62§	15	Own 148W	CD	R 6.70–10.82	Tim 36000TW	Ws4IA	708	1102	A	TX	67	9¼x3½x¾	A
11	. . . . . HC147		148	175	36000	11500	10.00/22	12.00/24	Wau 6SRKR	6–4⅝x5½	517	5.5	368	125–2250	7–3x13⅞	Y	Fu 5A62§	15	Own 147W	CD	R 6.70–10.82	Tim 36000TW	Ws4IA	708	1102	A	TX	67	9¼x3½x¾	A
12	. . . . . HC175		167	185	45000	14600	12.00/24†	14.00/24‡	Wau 145GK	6–5¼x6	779	6.2	585	186–2100	7–3½x17¾	Y	Fu 4B86●	12	Own 175W	CD	R 7.31–12.42	Tim 27454W	Ws4IA	786	1212	A	TX	77	9¼x3½x¾	A
13	. . . . . HC250		178	190	60000	18400	14.00/24‡	14.00/24‡	Wau 145GK	6–5¼x6	779	6.2	585	186–2100	7–3½x17¾	Y	Fu 4B86●	12	Own 251W	CD	R 7.31–12.42	Tim 27454W	Ws4IA	786	1212	A	JX	95	12x3½x⅜	AL
14	(D) . . . HC115H		167	185	32000	12250	10.00/20	11.00/24	Cum HB600	6–4⅞x6	672	17	500	150–1800	7–4½x16½	Y	Fu 4B86●	12	Own 137W	CD	R 6.70–10.82	Tim 36000TW	Ws4IA	648	1064	A	TX	77	9x3¼x¼	A
15	(D) . . . HC175H		167	185	45000	14930	12.00/24†	14.00/24‡	Cum HBD600	6–4⅞x6	672	17	500	150–1800	7–4½x16½	Y	Fu 4B86●	12	Own 175W	CD	R 7.31–12.42	Tim 27454W	Ws4IA	786	1212	A	TX	77	9¼x3½x¾	A
16	(D) . . . HC250H		178	190	60000	18700	14.00/24‡	14.00/24‡	Cum HBD600	6–4⅞x6	672	17	500	150–1800	7–4½x16½	Y	Fu 4B86●	12	Own 251W	CD	R 7.31–12.42	Tim 27454W	Ws4IA	786	1212	A	JX	95	12x3½x⅜	AL
17	Studebaker . . . 2R5	972	112	112	4600	2125	6.00/16S	6.50/16S	Own 1R	6–3x4	170	6.5	134	80–4000	4–2⅞x5⅛	N	Own 673519	3	Own 673874	Hy	H **–4.82	Own 677574	Wg4IH	170	276	CO	2I	40	7x2⅛x⅛	T
18	. . . . . 2R10	1038	122	122	6100	2400	6.50/16S	7.50/16S	Own 1R	6–3x4	170	6.5	134	80–4000	4–2⅞x5⅛	N	Own 673519	3	Own 677806	8F	H 5.57–4.86	Own 677574	Wg4IH	198	314	CO	2I	50	7⅛x2⅛x½	T
19	. . . . . 2R15–21	1186	121	121	7800	3005	7.00/17S	7.00/20	Own 2R	6–3x4	170	6.5	134	80–4000	4–2⅞x5⅛	N	Own 676044	4	Own 677768	8F	H 5.83–6.66	Own 677091	LH4IH	216	342	Ce	TX	50⅛	8½x2⅛x⅝	T
20	. . . . . 2R15–31	1205	131	131	10000	3065	7.00/17S	7.00/20	Own 2R	6–3x4	170	6.5	134	80–4000	4–2⅞x5⅛	N	Own 676044	4	Own 677768	8F	H 5.83–6.66	Own 677091	LH4IH	216	342	Ce	TX	60⅛	8⅞x2¾x⅛	T
21	. . . . . 2R16	1291	131	195	14000	3695	6.50/20D	8.25/20	Own 3R	6–3⅞x4⅜	226	6.5	174	94–3400	4–2⅞x5⅛	N	Own 676045	4	Own 675732▲	8F	H 6.66–5.66	Own 674484	LH4IH	280	442	Ce	TX	60⅛	8½x2¾x⅛	T
22	. . . . . 2R17	1592	131	195	16000	4180	7.50/20D	8.25/20	Own 3R	6–3⅞x4⅜	226	6.5	174	94–3400	4–2¾x5⅛	N	Own 676045	4	Own 675571▲	Hy	H 6.80–	Own 674484	LH4IH	350	553	Ce	TX	60⅛	8½x2¾x⅛	P
23	Truckstell(C) F18–5		140	194	18500	▲5365	7.50/20°	9.00/20	Ford	8–3⅞x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford & BL	12	Cla R1250	8F	H 5.67–6.83	Ford	L4IHV	390	600	a	TX	65¾	7½x3x.47	CTf
24	(C) F19–5–0		108	166	19500	▲5615	7.50/20°	9.00/20	Ford	8–3⅞x3¾	239	6.7	180	100–3800	3–2½x4.71	N	Ford & BL	12	Cla R1250	8F	H 5.67–6.83	Ford	L4IHV	390	600	a	TX	65¾	7½x3x.47	CTf
25	(C) C18–5		147	195	18500	▲5530	7.50/20°	9.00/20	Chevrolet	6–3⅞x3½	235	6.6	192	93–3100	4–2¾x5⅛	N	Chev & BL	12	Cla R1250	8F	H 5.67–6.83	Chevrolet	L4IHV	399	600	a	TX	70	9⅝x3x.50	CTf
26	(C) C19–5–0		120	180	19500	▲5700	7.50/20°	9.00/20	Chevrolet	6–3⅞x3½	235	6.6	192	93–3100	4–2¾x5⅛	N	Chev & BL	12	Cla R1250	8F	H 5.67–6.83	Chevrolet	L4IHV	399	600	a	TX	70	9⅝x3x.50	CTf
27	Ward La Fr. . . D–1		149	220	25000	▲ 9500	10.00/20	11.00/20	Con T6427	6–4⅛x4⅞	427	5.1	340	132–2600	7–2⅞x13½	Y	Ful 5A430	5	Tim Q–100	B	R **–6.83	Tim 35017TW	Ws4A	600	928	C	TM	68¼	9¾x3x¼	....
28	. . . . . D–1C		149	220	29000	▲ 9500	11.00/20	11.00/22	Con T6427	6–4⅛x4⅞	427	5.1	340	132–2600	7–2⅞x13½	Y	Ful 5A430	5	Tim S–200	S2	R **–7.08	Tim 35017TW	Ws4A	673	1031	C	TM	68¼	9¾x3x¼	....
29	. . . . . D–2K		149	220	29000	▲10000	11.00/20	11.00/22	Wau 140GK	6–4½x5½	525	6.4	425	168–2400	7–2¾x13⅜	Y	Ful 5A620	5	Tim S–200	S2	R **–7.84	Tim 35017TW	Ws4A	673	1031	C	TM	68¼	10x3½x⅞	....
30	. . . . . D–2Z		149	220	29000	▲10000	11.00/20	11.00/20	Wau 140GZ	6–4⅝x5½	554	6.4	456	184–2400	7–3¼x13⅞	Y	Ful 5C650	5	Tim S–200	S2	R **–7.84	Tim 35017TW	Ws4A	673	1031	C	TM	68¼	10x3½x⅞	....
31	. . . . . D–3		149	220	29000	▲10000	11.00/20	11.00/22	Con R6572	6–4¾x5½	572	5.9	440	189–2600	7–3¼x14½	Y	Ful 5C650	5	Tim S–200	S2	R **–7.84	Tim 35017TW	Ws4B	673	1031	C	TM	68¼	10x3½x⅞	....
32	. . . . . D–3S		149	220	29000	▲10000	11.00/20	11.00/22	Con R6602	6–4⅞x5½	602	5.9	463	198–2600	7–3¼x14½	Y	Ful 5C650	5	Tim S–200	S2	R **–7.84	Tim 35017TW	Ws4B	673	1031	C	TM	68¼	10x3½x⅞	....
33	. . . . . D–5		149	220	35000	▲12500	11.00/22	11.00/24	Cum HB600	6–4⅞x6	672	17	500	150–1800	7–4½x16¾	Y	Ful 5C650	5	Tim U–200	S2	R **–6.42	Tim 27463	Ws4B	681	1041	C	TM	68¼	10x3½x⅞	....
34	Willys (Sd.Del.) 463	1450*	104	104	4000	*2752	6.50/15S	.....	Own 463	4–3¼x4⅜	134	6.5	105	63–4000	3–2.33xo 4S	N	WG T96	3	Spl 23–1	Hy½	H 4.88–5.38	Own I Tr	B4IH	133	220	a	2I	....	5x2¼x.063	TfD
35	Willys 2WD	1425*	118	118	5300	*2788	6.50/16S‡	7.00/16S	Own 2WD	4–3½x4⅜	134	6.5	105	60–4000	3–2.33x5.48	N	WG T90E	3	Tim51540NX	3S½	H 5.38–6.17	Cla F–154	B4IH	176	276	a	2I	42.28	5½x2x⅛	TD
	Four-Wheel-Drive																																	
36	Corbitt 22FG	**	159	Opt	22000	.....	9.00/20	10.00/20	Con B6371	6–4½x4½	371	6.0	280	100–2600	7–2⅞x13½	Y	Fu 5A43	5	Tim R2090H	2F	H ** –8.43	Tim F2090H	L4IHV	....	868	a	TD	74	9x3x¼	DL
37	Dodge B–1–P–W		126	126	8700	.....	7.50/16–S	9.00/16–S	Own T–137	6–3½x4⅛	230	6.7	185	94–3200	4–2½x4.8	Y	NP–38580	4	Own T–137	HyF	H 4.8–5.8	Own T–137	O4IH	210	311	c	TX	52½	⅛x2⅛x6½	C
38	FWD . . . . . HA		132	168	17000	▲7470	8.25/20D	10.00/20	Wau BZ	6–4x4¼	320	5.9	237	104–3000	7–2⅝x10¼	Y	Own H	5	Own H	8F	H 6.6 –9.01	Own H	L4IHV	391	807	a	T4	79½	9x3x¼	T
39	. . . . . HR		132	168	20000	▲8000	9.00/20	10.00/20	Wau MZA	6–4¼x4¾	404	5.6	291	129–2800	7–2⅝x12⅝	Y	Own H	5	Own H	8F	H 6.6 –9.01	Own H	L4IHV	391	807	a	T4	79½	9x3x¼	T
40	. . . . . HC		154	154	20000	▲8050	9.00/20	10.00/20	Wau MZA	6–4¼x4¾	404	5.6	291	129–2800	7–2⅝x12⅝	Y	Own H	5	Own H	8F	H 6.6 –9.01	Own H	L4IHV	391	807	a	T4	89¾	7⅛x3x⅜	C
41	. . . . . SU		150	182	28000	▲10570	11.00/20D	11.00/20	Wau 8RKR	6–4⅝x5½	517	5.5	365	126–2400	7–3x13⅞	Y	Own U	5	Own U	BF	H 6.7 –9 8	Own U	L4IHV	512	867	a	T4	90	8⅛x3x⅜	C
42	. . . . . ZU		150	182	33000	12540	11.00/20D	11.00/20	Wau 140GZ	6–4⅝x5½	554	6.4	460	188–2600	7–3¼x13⅜	Y	Own S	5	Own ZU	8F	H 6.79–12.59	Own ZU	L4IHV	640	1106	a	T4	90	10⅛x3x⅜	C
43	. . . . . M7		150	180	38600	▲15500	12.00/20D	12.00/24	Wau 145GK	6–5¼x6	779	6.2	585	186–2000	7–3½x17¾	Y	Own M	10	Tim 1758	2F	H ** –7.33	Wis F409	Ws4IA	584	976	a	T4	90	10⅛x3x⅜	C
44	(D) M7D		150	180	38600	▲15700	12.00/20D	12.00/24	Bu DC844	6–5¼x6½	844	...	605	180–1800	7–3¾x17	Y	Own M	10	Tim 1758	2F	H ** –7.33	Wis F409	Ws4IA	584	976	a	T4	90	10⅛x3x⅜	C
45	. . . . . M10		150	180	44000	15800	11.00/24D	12.00/24	Wau 145GK	6–5¼x6	779	6.2	585	186–2000	7–3½x17¾	Y	Own M	10	Tim 79721	2F	H ** –7.7	Wis F409	Ws4IA	614	1030	a	T4	90	10⅛x3x⅜	C
46	(D) M10D		150	180	44000	▲16400	11.00/24D	12.00/24	Bu DC844	6–5¼x6½	844	...	605	180–1800	7–3¾x17	Y	Own M	10	Tim 79721	2F	H ** –7.7	Wis F409	Ws4IA	614	1030	a	T4	90	10⅛x3x⅜	C
47	Marmon–Herr . . . MH440–4		158	170	24000	▲9300	9.00/20D	10.00/20	Her WXLC3	6–4¼x4¾	404	5.4	293	118–2800	7–2⅝x13⅛	Y	Fu 5A430	5	Own 1121	2B	H ** –8.43	Own 121	W . . . . A	584	887	e	F	72	9½x3x¼	T
48	Herr . . . MH555–4		161	173	28000	▲10200	10.00/20D	11.00/20	Her RXC	6–4⅝x5½	529	6.3	390	131–2200	7–3x13¾	Y	Fu 5A620	5	Own 1122	2B	H ** –8.15	Own 122	W . . . . A	692	1039	e	F	72	10⅛x3x⅛	T
49	(C) R5–4		134	134	15500	▲4847	7.50/20D	7.50/20	Ford	8–3⅞x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Ford	8	H ** –6.67	Own M5	F . . . . H	303	563	a	F	60⅛	7x2¾x⅛	T
50	(C) R6–4		158	158	15500	▲4973	7.50/20D	7.50/20	Ford	8–3⅞x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Ford	8	H ** –6.67	Own M5	F . . . . H	303	563	a	F	84⅛	7x2¾x⅛	T
51	(C) LD6P–4		114	....	.....	.....	15″	15″	Ford	8–3⅞x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Ford	S	T ** –4.11	Own O	F . . . . H	162	....	A	F	....	....	X
52	(C) LD7–4		114	....	4700	▲2719	15″	15″	Ford	8–3⅞x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Ford	S	H ** –4.11	Own O	F . . . . H	162	....	A	F	40⅛	5½x2¼x⅛	T
53	(C) R3–4		122	....	6800	▲4500	7.50/17	7.50/17	Ford	8–3⅞x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Ford	8	H ** –4.86	Own I	F . . . . H	186	....	A	F	48	6x2¼x⅛	T
54	(C) R4–4		134	....	7500	.....	7.00/18S	7.00/18	Ford	8–3⅞x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Ford	S	H ** –5.33	Own	F . . . . H	303	563	A	F	60⅛	7x2¾x⅛	T
55	(C) . . R5–6–COE4		110	158	15500	.....	7.50/20D	7.50/20	Ford	8–3⅞x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Ford	S	H ** –6.67	Own	F . . . . H	303	563	A	F	60⅛	7.08x2.8x¼	T
56	Oshkosh . . . W–312		149	205	25000	▲10200	10.00/20D	11.00/20	Her WXLCO3	6–4¼x4¾	404	6.3	312	139–2600	7–2⅝x13½	Y	Fu 5A43	10	Own W312	8F	H ** –6.8	Own W312	L4IL	510	876	G	TX	82	8¼x⅛x¾	TF
57	. . . . . W1700		150	205	28000	▲11000	11.00/20D	12.00/20S	Her RXC	6–4⅝x5½	529	5.4	395	131–2200	7–3x13¼	Y	Fu 5A620	5	Own W1700	8F	H ** –6.4	Own 1700	L4IH	570	980	G	TX	82	8¼x3x¾	TF
58	. . . . . W–700		150	205	30000	▲12000	11.00/20D	12.00/20	Her RXCO	6–4¼x5½	529	5.4	395	131–2200	7–3x12¾	Y	Fu 5A650	10	Own W700	2F	H ** –6 8	Own W700	L4IH	630	975	G	TX	82	10⅛x3x¾	TF
59	(D) . . . W–703D		150	205	30000	▲12700	11.00/20D	12.00/20	Her DRXC	6–4⅝x5½	529	15.	398	147–2200	7–3½x13¼	Y	Fu 5A650	10	Own W700	2F	H ** –6.8	Own W700	L4IHA	630	975	G	TX	82	10⅛x3x ⅜	TF
60	. . . . . W–703		150	205	30000	▲12200	11.00/20D	12.00 /20	Her RXLD	6–4¼x5¼	558	5.4	430	150–2200	7–3⅛x13¼	Y	Fu 5A650	10	Own W700	2F	H ** –6 8	Own W700	L4IH	630	975	G	TX	82	10⅛x3x⅜	TF
61	. . . . . W–705		150	205	30000	▲12200	11.00/20D	12.00/20	Her RXLD	6–4¼x5¼	558	5.4	430	150–2200	7–3⅛x13¾	Y	Fu 5A650	10	Own W700	2F	H ** –6 8	Own W700	L4IH	630	975	G	TX	82	10⅛x3x⅜	TF
62	(D) W–906		158	181	38000	▲15600	12.00/20D	14.00 /20S	Cum HB600	6–4⅞x6	672	...	500	150–1800	7–4½x16	Y	Fu 4A86	12	Own W906	2F	H ** –6 2	Own W906	LT4IWS	645	975	G	TX	90	10⅛x3½x⅜	TF
63	. . . . . W2200		160	181	40000	▲16500	13.00/20D	14.00/20S	Bu MO779	6–5¼x6	779	...	575	188–2100	7–3¾x17	Y	Fu 4A86	12	Own W2200	2F	H ** –6.15	Own 2200	LT4IA	645	975	G	TX	90	10½x3½x⅜	TF
64	. . . . . W2201		160	181	40000	▲16500	13.00/20D	14.00/20S	Bu MO893	6–5⅝x6	803	...	670	200–1800	7–3¾x17	Y	Fu 4A86	12	Own W2201	2F	H ** –6.15	Own 2201	LT4IA	645	975	G	TX	90	10½x3½x⅜	TF
65	(D) W2204		160	181	46000	▲18500	13.00/20D	14.00 /24	Bu 6DC844	6–5½x6½	844	...	605	180–1800	7–3¾x17	Y	Fu 4A86	12	Own W2204	2F	H ** –6 4	Own 2204	LT4IA	780	1190	G	TX	90	10½x3½x⅜	TF
66	. . . . . W2205		160	181	54000	▲19500	13.00/20D	14.00/24	Bu 6DC8844	6–5¼x6½	844	...	740	240–2100	7–3¾x17	Y	Fu5A920	10	Own W2205	2F	H ** –6.3	Own W2205	LT4IA	780	1190	G	TX	90	10½x3½x⅜	TF
67	Sterling . . . DD115		160	178	32000	11500	10.00/20	11.00/24	Wau 6SRKR	6–4⅝x5½	517	5.5	368	125–2250	7–3x13⅞	Y	Fu 5A62△	10	Tim 1357W	2F	H 6.52–8 6	Tim F3110W	Ws4IA	644	984	A	TX	76	9x3¼x¼	A
68	(D) . . . DD145H		167	185	36000	13900	11.00/20	12.00/24	Cum HB600	6–4⅞x6	672	17	500	150–1800	7–4½x16½	Y	Fu 4B86▽	10	Tim 1758W	2F	H 7.33–10 3	Tim F400CW	Ws4IA	644	984	A	TX	77	9¼x3⅝x⅜	A

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▲ Includes Cab. † Rear only: Front 11.00/24. ‡ Rear only: Front 12.00/24. ▲ 2 speed 6.13–8.10 optional * Complete Vehicle with pick-up type body. △ Timken T76—2 speed transfer case. ° Front only: Rear 8.25/20. § Auxiliary Transmission Own OJ. ▽ Timken T77 2-speed Transfer Case.

USER REPORT:

"Our average brake maintenance cost .....$0.00085 per mile."

DAILY FREIGHT SERVICE

SCHMIDT TRUCK LINES

FARGO
Dial 6232

Duluth 2, Minnesota
July 10, 1947

Warner Electric Brake Mfg. Company
Post Office
Beloit, Wisconsin

Gentlemen:

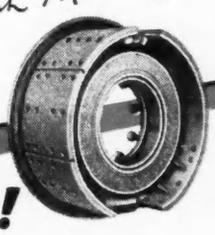
During the past twelve months we have kept maintenance cost records on all our trailers. Brake maintenance, including parts and labor, averaged $51.00 per unit and each unit travelled more than 60,000 miles. Our average brake maintenance cost was $0.00085 per mile.

We are satisfied that no other type of power brake could have given us the low maintenance cost of your electric brakes. However, we would like to know if our costs are comparable with other fleets using Warner Electric Brakes.

Your brakes have been used exclusively on all our equipment since 1932.

Very truly yours,

SCHMIDT TRUCK LINES
By Adolph Muehring



NEW!

Warner Electric Brakes of 2-shoe construction in sizes 16½" x 5", 16½" x 6" and 16½" x 7". A really new concept of super-stopping power. Ask about them.

WARNER ELECTRIC BRAKES
USED EXCLUSIVELY BY US SINCE 1932!

THE low-cost maintenance and long-time satisfaction experienced by SCHMIDT TRUCK LINES is *not unusual — it's just good average performance* for Warner Electric Brake equipped fleets!

Warner Electric Brakes are specifically engineered to meet every trailer braking need. No other brakes equal their rugged construction, long lining life, positive control and dependable performance even under the most severe conditions, of rain, snow and ice.

Being activated by electricity, they are instantaneous in action — a vital factor in emergencies.

CHECK YOUR BRAKE PERFORMANCE AND MAINTENANCE COSTS! If you want maximum safety plus economical performance, standardize on Warner Electric Brakes. Write for illustrated literature explaining their many advantages.

WARNER ELECTRIC BRAKE MFG. CO.
BELOIT, WISCONSIN

WARNER
THE ORIGINAL AND PROVEN
ELECTRIC BRAKES
SINCE 1927

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Line Number	Make and Model	Chassis List Price	Wheelbase: Minimum Standard	Wheelbase: Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	Tire Sizes: D-dual rear S-single rear: Standard Front and Rear	Tire Sizes: Maximum Authorized Tire Size (Duals unless noted)	Engine Details: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	Transmission: Make and Model	Forward Sp'ds	Rear Axle: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	Front Axle: Make and Model	Brakes: Service: Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimension (Min. Std. W. B.)	Frame: Side Rail Dimensions	Type
1	Walter(c.f.)....FN		126	150	20000	7500	9.00/20D	10.00/20S	Wau MZA	6-4¼x4¾	404	5.6	290	125–2600	7-2⅝x12½	Y	Own FN	6	Own FNB	2	H	6.0–8.0	Own FN	O4IA	470	670	G		84	7x2¾x¼	C
2	(c.f.)..FZM		126	150	24000	8500	10.00/20D	12.00/20S	Wau MZA	6-4¼x4¾	404	5.6	290	125–2600	7-2⅝x12½	Y	Own FN	6	Own FMB	2	H	6.0–8.0	Own FJ	O4IA	470	670	G	I	84	12x3½x½	B
3	(c.f.)..FCK		126	138	30000	10500	10.00/24D	11.00/24S	Wau 8RKR	6-4⅝x5⅛	517	5.5	365	125–2200	7-3x13¼	Y	Own FC	6	Own FCB	2	H	7.5–9.0	Own FC	O4IA	585	890	D	FI	84	13x3¾x½	B
4	(c.f.)....FC		138	162	32000	11000	11.00/24D	12.00/24S	Wau 8RKR	6-4⅝x5⅛	517	5.5	365	125–2200	7-3x13¼	Y	Own FC	6	Own FCB	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	96	14x3¾x½	B
5	(c.f.)..FGB		126	162	32000	12000	11.00/24D	12.00/24S	Wau 145GK	6-5¼x6	779	5.7	580	185–2000	7-3½x17¾	Y	Own FA	6	Own FCB	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	84	14x3¾x½	B
6	(c.f.)..FGR		126	162	42000	13000	12.00/24D	12.00/24	Wau 145GK	6-5¼x6	779	5.7	580	185–2000	7-3½x17¾	Y	Own FA	6	Own FCR	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	89	14x3¾x½	B
7	Ward La Fr..FD1				35000	▲11500	11.00/22	11.00/22	Cont 6513	6-4½x5¾	513	5.9	405	180–2800			Ful 5A620	5	Tim R462W			** –8.15	Tim F3100W	BW4IA			Co			10x3x⅄	
8	(D).....FD2				35000	▲12000	11.00/24	11.00/24	Cum HB600	6-5½x6	672	17.5	500	150–1800	s		Ful 5A920	5	Tim R462W			** –8.15	Tim F3100W	BW4IA			Co			10x3x⅄	
9	Willys Jp...CJ-2A	1220*	80	80	3500	•2169	6.00/16	7.00/15	Own CJ-2A	4-3½x4½	134	6.5	105	60–4000	3-2.33x5.48	N	WG T90C	‡6	Spl 41-2	Hy	H	** –5.38	Spl 25	B4IH	118	198	a	F		4x1¼x⅄	P
10	.....4WD	1725*	118	118	5300	•2920	7.00/16	.....	Own 4WD	4-3½x4½	134	6.5	105	60–4000	3-2.33x5.48	Y	WGT90A	‡6	Tm1 5540NX3	S½	H	** –5.38	Spl 25	B4IH	176	276	a	2I	42.28	5½x2x⅄	TD
	Six-Wheelers																														
	Wheels ▼ Driven																														
11	Duplex....TH6		162	220	30000	9180	8.25/20	9.00/20	Her JXD	6-4x4½	320	6.2	240	113–3000	7-2½x10⅟	Y	Fu 5B33ᴬ	10	Tim SBD1055	BF	L	**–6.16	Tim 32502H	L6IHV	513	839	A	TX	83¼	9½x3½x⅄	L
12	(D).....L6		172	208	45000	15000	11.00/20	12.00/20	Cum HB600	6-4⅞x6	672	17.4	495	150–1800	7-4½x16½	Y	Fu 5A920	5	Tim SD454	SF2	L	6.8–8.15	Tim 26450	Ws6IA	1137	1625	A	TX	77⅝	9½x3½x⅄	L
13	Federal....663MA		189	225	.....	1▲500	10.00/20	10.00/22	Con R6602	6-4⅞x5⅜	602	6.1	464	200–2600	7-3¼x14½	Y	Fu 5A65▼	15	T SW3012P	WF	R	** –6.16	Tim 36000TW	Ws6IA	1082	1569	a	TD	108	10¼x3½x⅄	T
14	.....664MAB		189	225	.....	1▲585	0 11.00/22	12.00/20	Con R6602	6-4⅞x5⅜	602	6.1	464	200–2600	7-3¼x14½	Y	Spl 7741▼	12	Tim SW456P	WF	R	** –7.6	Tim 27452W	Ws6IA	1308	1888	a	TD	108	10¼x3½x⅄	T
15	.....664MA		189	225	.....	1▲950	11.00/22	12.00/20	Con R6602	6-4⅞x5⅜	602	6.1	464	200–2600	7-3¼x14½	Y	Spl 7741▼	12	Tim SD462P	BR	R	** –8.15	Tim 27452W	Ws6IA	1092	1624	a	TD	108	10¼x3½x⅄	T
16	F.W.D.....M6x6		Opt	Opt	58000	▲21400	11.00/24D	11.00/24	Wau 145GK	6-5¼x6	779	6.2	585	186–2000	7-3½x17¾	Y	Own M	10	Wls SD462	2F	I	** –10.6	Wls F409	Ws6IA	1080	1680	a	T6	183	10⅄x3x⅟	P
17	(D)....M6X6D		Opt	Opt	58000	▲21600	11.00/24D	11.00/24	Bu DC844	6-5¼x6	844	...	605	180–1800	7-3¾x17	Y	Own M	10	Wls SD462	2F	I	** –10.6	Wls F409	Ws6IA	1080	1680	a	T6	216	10⅄x3x⅟	P
	International (2)																														
18	.....KB-6F 4R	3300	151	194	22000	7010	7.50/20D	8.25/20	Own BLD250	6-3⅄x4½	251	6.3	200	100–3200	4-2⅛x5⅟	N	Own F51	5	Own RF1450	SF	H	6.16–6.66	Own F470	LH61HV	495	869	e	PX	77	8⅄x⅄x⅄	T
19	.....KB-8F 4R	4950	161	215	27000	8670	8.25/20D	9.00/20	Own RED361	6-4⅛x4½	361	6.3	282	126–3000	7-3¼x10⅟	Y	Own F52	5	Own RF1560	SF	H	6.50–7.16	Own F550	LH61HV	644	1105	e	PX	84	9¼x3⅄x⅜	T
20	.....KB-11F 4R	7425	161	215	37000	10830	9.00/20D	10.00/20	Own RED450	6-4⅝x5	451	6.3	360	148–2600	7-3¼x10⅟	Y	Own F54	5	Own RF1670	SF	H	** –7.16	Own F760	LH61HV	738	1179	G	PX	84	10x3⅄x⅜	T
21	.....W1064L	12925	203	239	40000	15750	10.00/22	11.00/22	Cum HB600	6-4⅞x6	672	17.4	492	150–1800	7-4½x....	Y	Spl 7741	4	Tim SW3012	WF	L	4.71–6.16	Own 82F	BW61A	876	.....		PX	108	10x3½x⅄	C
22	.....W4564OH	13750	188	242	45000	16635	10.00/22	11.00/22	Cum HB600	6-4⅞x6	672	17.4	492	150–1800	7-4½x....	Y	Spl 7741	4	Tim SW456	WF	H	6.00–7.6	Own 83F	BW61A	1020	.....		PX	90	10x3½x⅄	L
23	.....W6564OH	15700	206	302	65000	19895	11.00/24	12.00/24	Cum HB600	6-4⅞x6	672	17.4	492	150–1800	7-4½x....	Y	Spl 7741	4	Tim SD466	2F	H	8.15–11.66	Own 82F	BW61A	.....	.....		PX	108	10x3½x⅄	L
	Kenworth																														
24	.....(D)....522		187	245	43000	12900	10 00/20	11.00/22	Cum HB6	6-4⅞x6	672	17.5	500	150–1800	7-4½x16½	Y	BL 8241	4	Tim U200P&†				Tim 36000TW	Ws41A	1135	.....				9 ½x3 ¼x⅄	C
25	.....(D)523 4R		193	241	41000	14600	10.00/20	11.00/22	Cum HB6	6-4⅞x6	672	17.5	500	150–1800	7-4½x16½	Y	BL 8241	4	Ti SW3012PA	WF	R	** –6.16	Tim 36000	Ws4rIA	924	1248	a	TD	102	9 ½x3 ¼x⅄	C
26	.....(D)524 4R		193	241	54000	15100	10.00/20	11.00/22	Cum HB6	6-4⅞x6	672	17.5	500	150–1800	7-4½x16½	Y	BL 8241	4	Tim SW456	WF	R	6.0 –7.6	Tim 36000	Ws4rIA	819	1192	a	TD	102	9 ½x3 ¼x⅄	C
27	.....528 4R		186	234	40000	12500	10.00/20	10.00/22	Bud LO525	6-4½x5½	525	5.5	385	150–2200	7-3x11½	Y	Fu 5A620	5	Ti SW3012PA	WF	R	** –6.16	Tim 35100	Ws4rIA	924	1248	a	TD	102	9 ½x3 ¼x⅄	C
28	.....(D)548 4R		193	241	54000	17000	11.00/22	12.00/24	Cum HB6	6-4⅞x6	672	17.5	500	150–1800	7-4½x16½	Y	BL 8241	4	Tim SD462	DR	R	** –8.15	Tim 36000	Ws4rIA	819	1192	a	TD	109	9 ½x3 ¼x⅄	dbC
29	.....(D)552 4R		255	255	54000	20700	13.00/24	13.00/24	Cum HB6	6-4¾x6	672	17.5	500	150–1800	7-4½x16½	Y	BL 8241	4	Tim SD462W	WF	R	** –8.15	Tim F3200W	Ws4rIA	1109	1192	a	TD	168	9 ½x3 ¼x⅄	dbC
30	(D).....825		193	241	42000	14900	10.00/20	11.00/22	Cum HB6	6-4¼x6	672	17.5	500	150–1800	7-4½x16½	Y	BL 8241	4	TGSW458P	WF		6.0–7.6	Tim 36000	Ws4rIA	1016	.....	a	TD	102	9 ½x3 ¼x⅄	C
31	829		186	234	42000	14650	10.00/20	11.00/22	Bud LO525	6-4½x5½	525	5.5	385	150–2200	7-3x11½	Y	Fu5A620	5	TSD3010P	DR	R	–8.27	Tim 36000	Ws4rIA	924	.....	a	TD	104	9 ½x3 ¼x⅄	....
	Marmon-Herr.																														
32	(C).....R5-6		156	....	22500	▲6673	7.50/20D	7.50/20	Ford	8–3⅄x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Timken	S	H	** –6.67	Own M5	M	503	....	a	F	82½	7 ½x3x ¼	C
33	(C).....R6-6		180	....	22500	▲6710	7.50/20D	7.50/20	Ford	8–3⅄x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Timken	S	H	** –6.67	Own M5	M	503	....	a	F	106¼	7 ½x3x ¼	C
34	.....MH440-6		182	....	34000	▲10500	9.00/20	10.00/20	Her WXLC3	6-4¼x4¾	404	5.4	230	118–2800	7-2⅝x13¼	Y	Fu 5A430	5	Own 1123	2B	H	** –8.43	Own 121	Ws..A	876	....	C	F	96	9¼x3x ¼	T
35	.....MH-555-6		182	....	42000	▲14900	11.00/20	11.00/20	Her RXC	6-4¾x5½	529	6.3	390	131–2200	7-3x13¼	Y	Fu 5A620	5	Own 1124	2B	H	** –8.15	Own 122	Ws..A	1092	1608	....	F	93	10⅄x3x⅄	T
36	(C)....R5-COE6		156	180	22500	.....	7.50/20D	7.50/20	Ford	8–3⅄x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Ford	S	H	6.67	Own	F...H	303	563	A	F	.....	7.08x2.82x¼	T
37	(C).....Q-5		136	....	21500	.....	9.00/20	10.00/20	Ford	8–3½x4⅜	337	6.4	255	145–3600	3		Ford	5	Ford	H	H	6.80	Own	F...H	350	583	A	F	61	9x3x ¼	T
38	(C).....Q-6		160	....	21500	▲7300	9.00/20	10.00/20	Ford	8–3½x4⅜	337	6.4	255	145–3600	3		Ford	5	Ford	H	H	** –6.80	Own	F...H	350	583	A	F	85	9x3x ¼	T
39	.....Q-7		196	....	21590	▲7500	9.00/20	10.00/20	Ford	8–3½x4⅜	337	6.4	255	145–3600	3		Ford	5	Ford	H	H	** –6.80	Own	F...H	350	583	A	F	85	9x3x ¼	T
40	(C).....Q-5-6		160	....	35000	▲9000	9.00/20	10.00/20	Ford	8–3½x4⅜	337	6.4	255	145–3600	3		Ford	5	Ford	....	H	** –6.80	Own	F...H	350	583	....	F	85	9x3x ¼	T
41	(C).....Q-6-6		184	....	35000	▲9300	9.00/20	10.00/20	Ford	8–3½x4⅜	337	6.4	255	145–3600	3		Ford	5	Ford	....	H	** –6.80	Own	F...H	350	583	....	F	109	9x3x ¼	T
	Oshkosh																														
42	.....W703-6X6		Opt	Opt	47000	16950	11.00/20D	12.00/20	Her RXLD	6-4¾x5¼	558	5.4	130	150–2200	7-3½x13¼	Y	Fu 5A650	12	Tim SD454W	2F	H	** –6.31	Own-Tim	L6IH	1080	1625	G	TX	Opt	10 ½ 3 ½ ⅜	B
43	(D)...W1600BD		245	Opt	60000	22770	11.00/24D	12.00/24	Bu 6DC844	6-5¼x6½	844	...	600	180–1800	7-3¾x17	Y	Fu 4BI86	12	Tim SD462	2F	H	** –6.14	Own-Tim	LT61A	1080	1625	G	TX	160	12⅜–3⅞–⅜	B
44	(D)‡W1600BDH		267	Opt	60000	24300▲	11.00/24D	12.00/24	Bu 6DC844	6-5¼x6½	844	...	600	180–1800	7-3¾x17	Y	Fu 4BI86	12	Tim SD462	2F	H	** –9.82	Own-Tim	LT61A	1080	1625	G	TX	174	12⅜–3⅞–⅜	B
45	(D)‡W1602BDH		272	Opt	95000	29300	14.00/24D	14.00/24	Bu 6DC844	6-5¼x6½	844	...	600	180–1800	7-3¾x17	Y	Fu 4BI86	12	Tim SD472	2F	H	** –13.9	Own-Tim	LT61A	.....	2217	G	TX	177	12⅜–3⅞–⅜	B
46	.....W1600BG		245	Opt	60000	22770	11.00/24D	12.00/24	Bu MO893	6-5⅝x6	893	...	625	200–1800	7-3¾x17	Y	Fu 4BI86	12	Tim SD462	2F	H	** –9.82	Own-Tim	LT61A	1080	1625	G	TX	160	12⅜–3⅞–⅜	B
47	(D)...W1600CD		259	Opt	60000	23400▲	11.00/24D	12.00/24	Cum 6HBI	6-4⅞x6	672	...	500	150–1800	7-4½x16	Y	Fu 4BI86	12	Tim SD462	2F	H	** –6.14	Own-Tim	LT61A	1080	1625	G	TX	174	12⅜–3⅞–⅜	B
48	(D)...W1600CDS		259	Opt	60000	23700▲	11.00/24D	12.00/24	Cum 6HBIS	6-4⅞x6	672	...	635	200–1800	7-4½x16	Y	Fu 4BI86	12	Tim SD462	2F	H	** –9.82	Own-Tim	LT61A	1080	1625	G	TX	174	12⅜–3⅞–⅜	B
49	(D)..‡W1600CDH		265	Opt	60000	24000▲	11.00/24D	12.00/24	Cum 6HBI	6-4⅞x6	672	...	500	150–1800	7-4½x16	Y	Fu 4BI86	12	Tim SD462	2F	H	** –9.82	Own-Tim	LT61A	1080	1625	G	TX	172	12⅜–3⅞–⅜	B
50	(D)..‡W1600CDSH		267	Opt	60000	24300▲	11.00/24D	12.00/24	Cum 6HBIS	6-4⅞x6	672	...	635	200–1800	7-4½x16	Y	Fu 4BI86	12	Tim SD462	2F	H	** –6.14	Own-Tim	LT61A	1080	1625	G	TX	174	12⅜–3⅞–⅜	B
51	Peterbilt(D)344DT		189	Opt	43000	16250	10.00/20D	11.00/22	Cum HB600	6-4⅞x6	672	17.5	500	150–1800	7-4½x16½	Y	Spl 7741	12	Tim SW3012W	WF	A	6.00– 8.5	T 36000W	Ws6IA	1212	1734	a	FD	106½	10⅜x3½x⅄	TL
52	(D).....345DT		187	Opt	54000	17300	10.00/20D	11.00/22	Cum HB600	6-4⅞x6	672	17.5	500	150–1800	7-4½x16½	Y	Spl 7741	12	Tim SW456W	WF	A	6.00–10.2	T 36000W	Ws6IA	1450	1626	a	FD	106½	10⅜x3½x⅄	TL
53	(D).....354DT		187	Opt	56000	17450	10.00/20D	11.00/22	Cum HB600	6-4⅞x6	672	17.5	500	150–1800	7-4½x16½	Y	Spl 7741	12	Tim SW456W	WF	A	6.00–10.2	T 27454W	Ws6IA	1450	1626	a	FD	106½	10⅜x3½x⅄	TL
54	(D).....355DT		187	Opt	56000	17900	10.00/20D	11.00/22	Cum HB600	6-4⅞x6	672	17	500	150–1800	7-4½x16½	Y	Spl 7741	12	Tim SD462W	2F	A	** –8.15	T 27454W	Ws6IA	1000	1626	a	FD	106½	10⅜x3½x⅄	TL
55	Reo....D–236, 4R		169	200	47000	13060▲	10.00/20	10.00/20	Con T–6427	6-4⅄x4⅞	427	6.2	336	153–2800	7-2⅞x13.6	Y	Cla270V-VO■	15	Tim SD3010	SF2	T	7.5	Tim 36000	Ws41A	1072	1570	var	TD	104⅝	9 ½x3 ¼x⅄	TfP
56	.....316, 4R		186	248	56000	16000▲	10.00/20	10.00/20	Con R–6602	6-4⅜x5⅜	602	5.9	464	203–2800	7-3 ¼x14.7	Y	Spi6252A-53‡	15	Tim SD454	SF2	T	7.33–8.15	Tim 36000	Ws41A	1082	1778	var	TD	108	10½x3 ½x⅜	TfP
57	Sterling...HBS130		164	183	32000	11000	8.25/20	10.00/20	Wau 6MZA	6-4¼x4¾	404	5.6	290	130–3000	7-2⅝x12½	Y	Fu 5A43	5	T-SBD1555DPH	SF	L	6.80–13.14	T-35011H	T61HV	664	1134	A	TX	83	9x3 ¼x ¼	A
58	.....HDS140		164	183	36000	11800	9.00/20	10.00/20	Wau 6MZA	6-4¼x4¾	404	5.6	290	130–3000	7-2⅝x12½	Y	Fu 5A43	5	T-SD3010PA	2F	L	6.84–10.22	T-35011TW	Ws6IA	1074	1554	A	TX	83	9x3 ¼x ¼	A
59	.....HWS160		164	183	42000	12800	10.00/20	11.00/22●	Wau 6SRKR	6-4⅝x5½	5175	5.3	368	125–2250	7-3x13¼	Y	Fu 5A62	5	T-SW3010PA	WF	L	5.40–8.50	T-36000TW	Ws6IA	1082	1574	A	TX	83	9x3 ¼x ¼	A

(Turn to Page 104, please)

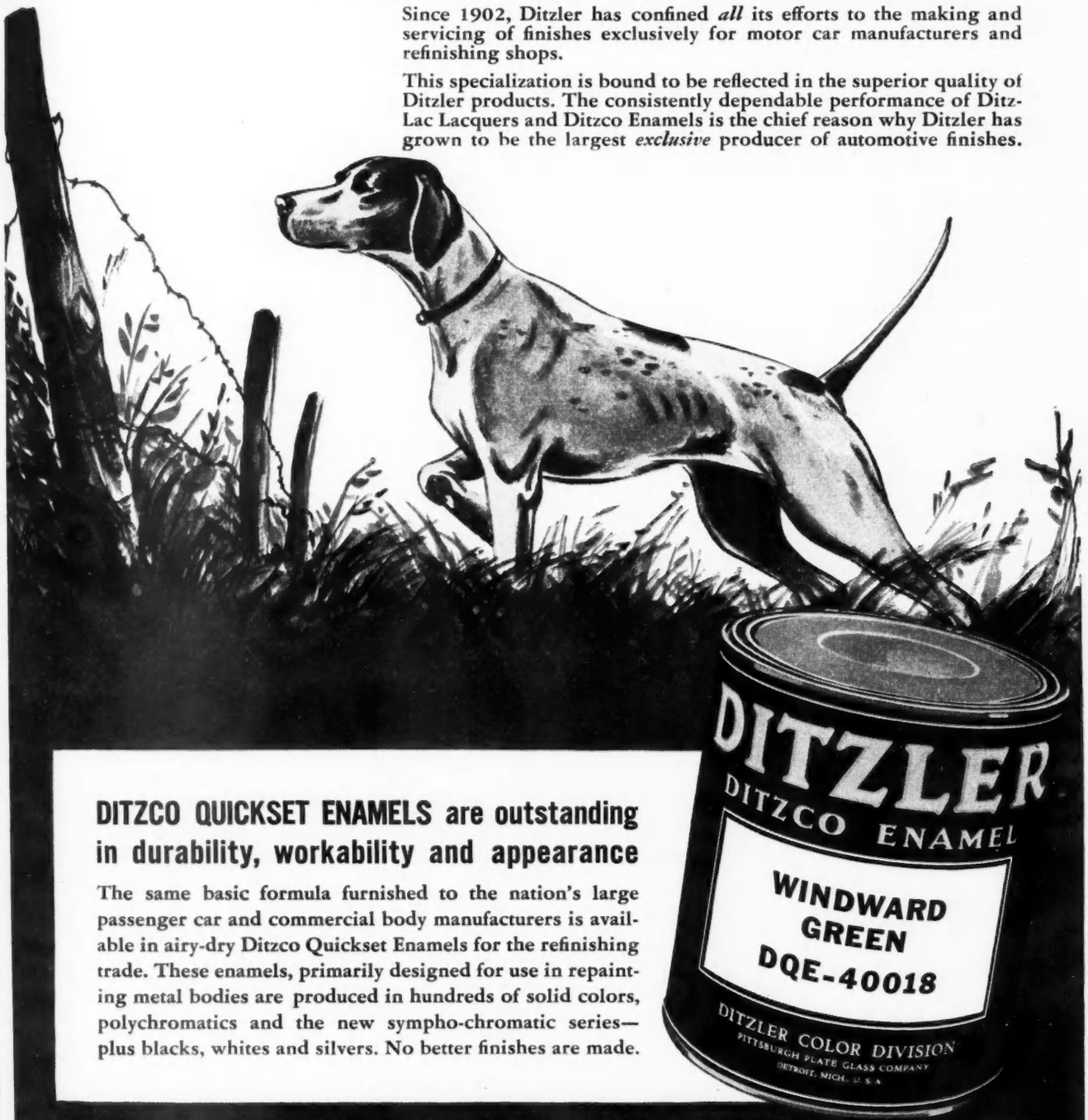
▼ Auxiliary transmission Spicer 703F with 3 forward speeds.
△ Torque divider, Timken T70–2 speed.
‡ Three speed transmission—2 speed transfer case.
▲ Includes cab. ■ 6231 Spicer Auxiliary Transmission.
‡ 8031F-G Spicer Auxiliary Transmission Available.
* Complete vehicle with pick-up type body.
§ Hydraulic Coupling. †Timken T13126 PA Trailing Axle.
▲ Chassis Weights on Duals Front, Center and Rear.
● When 11.00-22 tires are required it is necessary to furnish 52 inch axle spacing.

You can't beat Specialization!

You hire a motor mechanic not an all-round mechanic to overhaul an automobile engine. You hire a radio repair man not an electrician to repair a radio. The specialist concentrates on specific problems and acquires a knowledge and thoroughness not attainable by anyone whose interests and contacts are too diversified.

Since 1902, Ditzler has confined *all* its efforts to the making and servicing of finishes exclusively for motor car manufacturers and refinishing shops.

This specialization is bound to be reflected in the superior quality of Ditzler products. The consistently dependable performance of Ditz-Lac Lacquers and Ditzco Enamels is the chief reason why Ditzler has grown to be the largest *exclusive* producer of automotive finishes.



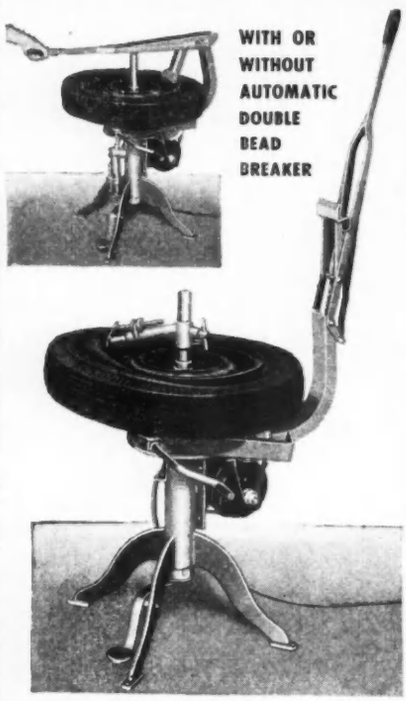
DITZCO QUICKSET ENAMELS are outstanding in durability, workability and appearance

The same basic formula furnished to the nation's large passenger car and commercial body manufacturers is available in airy-dry Ditzco Quickset Enamels for the refinishing trade. These enamels, primarily designed for use in repainting metal bodies are produced in hundreds of solid colors, polychromatics and the new sympho-chromatic series—plus blacks, whites and silvers. No better finishes are made.

PPG PITTSBURGH PLATE GLASS COMPANY

NOW.. the MOTOR DRIVEN

BISHMAN TIRE CHANGER



WITH OR WITHOUT AUTOMATIC DOUBLE BEAD BREAKER

ZIPS TIRES OFF or ON-TO RIMS in a JIFFY!

as smoothly as peeling bananas. Special ¼ H. P. AC Repulsion-Induction Motor—250 to 1 gear ratio—PLENTY of power for toughest jobs. Handles 14, 15, 16, 17 inch wide or narrow rims—speeds up tire service, cuts labor costs, satisfies trade, attracts new customers.

STOPS TIRE ABUSE

No pounding, pinching or scuffing. DOES NOT DISTURB WHEEL WEIGHTS. Designed by tire men, tested in service. Revolutionary NEW features:-

BEAD BREAKER operates with same set-up as for demounting tire—frees BOTH beads with ONE pull on handle.

UNIVERSAL RIM CHUCK automatically centers ANY rim. **DUBL-DUTY** Bead Contact SHOE does 2 JOBS—mounts or demounts tire from rim—no time-wasting gadgets.

HANDY FOOT PEDAL SWITCH leaves both hands free to handle tire. NO BOLTING DOWN necessary. Worm gears sealed in oil. ALL STEEL CONSTRUCTION. Soon SAVES its low cost.

ASK YOUR JOBBER OR WRITE—

BISHMAN MFG. CO.

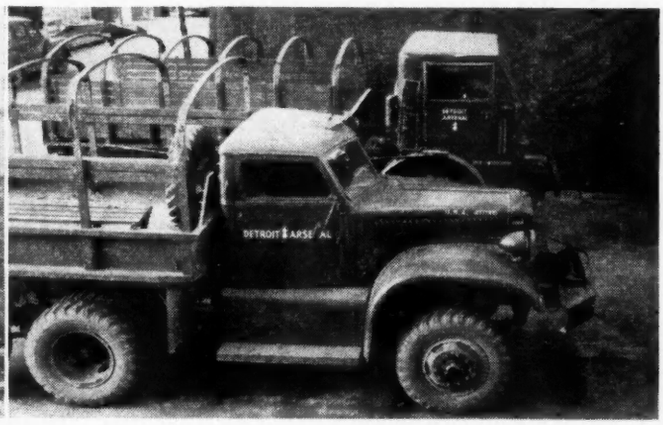
OSSEO 4, MINN.

BISHMAN
SERVICE EQUIPMENT

(Continued from Page 102)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See deduction)	TIRE SIZES Standard Front and Rear	TIRE SIZES D-dual rear S-single rear	TIRE SIZES Maximum Authorized Tire Size (Duals un-less noted)	ENGINE DETAILS Make and Model	ENGINE DETAILS No. of Cylinders, Bore and Stroke	ENGINE DETAILS Displacement	ENGINE DETAILS Comp. Ratio	ENGINE DETAILS Torque lb. ft.	ENGINE DETAILS Max. Brake H.P. at R.P.M. Given	ENGINE DETAILS Number, Diameter and Length Main Bearings	Governor Standard	TRANSMISSION Make and Model	TRANSMISSION Forward Sp'ds	REAR AXLE Make and Model	REAR AXLE Gear and Type	REAR AXLE Drive & Torque	REAR AXLE Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operation	BRAKES SERVICE Lining Area	BRAKES SERVICE Drum Area	BRAKES SERVICE Drum Material	BRAKES Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	FRAME Type
1	Sterling, Cont'd																															
2	HWS235		182	193	52000	15700	11.00/20		11.00/24	Wau 145GK	6-5½x6	779.6	6.2	585	180-2100	7-3½x17¾	Y	Fu 4B86	4	T-SW456P	SF	5.67–8.20	T-27454W	W861A	1308	1892 A	TX	92	9 1/4x3 3/8x3 5/8	A
3	HWS160H		182	193	42000	14250	10.00/20		11.00/22	Cum HB600	6-4½x6	672	17.5	500	150-1800	7-4½x16½	Y	Fu 4B86	4	T-SW3012PA	WF	4.71–6.17	T-36000TW	W861A	1362	1874 A	TX	92	9 1/4x3 3/8x3 5/8	A
4	(D) HWS235H		182	193	52000	16000	11.00/20		11.00/24	Cum HB600	6-4½x6	672	17.5	500	150-1800	7-4½x16½	Y	Fu 4B86	4	T-SW456P	WF	5.67–8.20	T-27454W	W861A	1088	1802 A	TX	83	9 1/4x3 3/8x3 5/8	A
5	(D) HWS235H		182	193	52000	16000	11.00/24		11.00/24	Cum HB600	6-4½x6	672	17.5	500	150-1800	7-4½x16½	Y	Fu 4B86	4	T-SW456P	WF	5.67–8.20	T-27454W	W861A	1088	1802 A	TX	83	9 1/4x3 3/8x3 5/8	A
6	HCS195		170	189	48000	15300	10.00/20		12.00/24	Wau 140GK	6-5x5½	526	6.0	426	142-2200	7-3½x13¾	Y	Fu5A92-3A92	15	Own 195W	CD	R 6.04–7.31	T-36000TW	W861A	1060	1912 A	JX	91	9 1/4x3 3/8x3 5/8	AL
7	HCS265		182	193	60000	17750	11.00/20	●	12.00/24	Wau 145GK	6-5½x6	779.6	2.5	585	186-2100	7-3½x17¾	Y	Fu 4B86	12	Own 265W	CD	R 9.21–13.16	T-27454W	W861A	1280	1988 A	JX	92	9 1/4x3 3/8x3 5/8	AL
8	HCS297		182	193	70000	20750	12.00/24	●	14.00/24	Wau 145GK	6-5½x6	779.6	2.5	585	186-2100	7-3½x17¾	Y	Fu 4B86	12	Own 330W	CD	R 9.21–13.16	T-27454W	W861A	1280	1988 A	JX	92	9 1/4x3 3/8x3 5/8	AL
9	HCS330		174	187	80000	23150	12.00/24	●	14.00/24	Wau 145GK	6-5½x6	779.6	2.5	585	186-2100	7-3½x17¾	Y	Fu4B86-3A92	12	Own 195W	CD	R 6.04–7.31	T-36000TW	W861A	1082	1802 A	TX	92	9 1/4x3 3/8x3 5/8	A
10	(D) HCS195H		182	193	48000	16000	10.00/20		11.00/22	Cum HB600	6-4½x6	672	17.5	500	150-1800	7-4½x16½	Y	Fu 4B86	12	Own 265W	CD	R 9.21–13.16	T-27454W	W861A	1160	1912 A	JX	92	9 1/4x3 3/8x3 5/8	AL
11	(D) HCS265H		182	193	60000	21000	11.00/20	●	12.00/24	Cum HBD600	6-4½x6	672	17.5	500	150-1800	7-4½x16½	Y	Fu 4B86	12	Own 330W	CD	R 9.21–13.16	T-27454W	W861A	1280	1988 A	JX	92	9 1/4x3 3/8x3 5/8	AL
	(D) HCS297H		182	193	70000	21000	11.00/24	●	14.00/24	Cum HBD600	6-4½x6	672	17.5	500	150-1800	7-4½x16½	Y	Fu 4B86	12	Own 330W	CD	R 9.21–13.16	T-27454W	W861A	1280	1988 A	JX	91	9 1/4x3 3/8x3 5/8	AL
	(D) HCS330H		174	187	80000	23450	12.00/24	●	14.00/24	Cum HBD600	6-4½x6	672	17.5	500	150-1800	7-4½x16½	Y	Fu 4B86	12	Own 330W	CD	R 9.21–13.16	T-27454W	W861A	1280	1988 A	JX	91	12 3/4x3 3/8x3 5/8	AL
	Truckstell																															
	(C) F2X26 2F		156	237	26000	♣5000	7.50/20		8.25/20	Ford	8-3½x3¾	239	6.4	180	100-3800	3-2½x4.71	N	Ford	4	Ford	SF	– –6.67	Ford	F61HV	502	836 Co	TX	82	7 1/4x3 3/8x 47	CT f
	(C) F2X27-0 2H		156	237	27000	♣6150	7.50/20		9.00/20	Ford	8-3½x3¾	239	6.4	180	100-3800	3-2½x4.71	N	Ford	8	Eat 1350	SFd	5.83–8.11	Ford	F61HV	502	836 Co	TX	82	7 1/4x3 3/8x 47	CT f
	(C) F2X34 2F		156	237	34000	♣8333	7.50/20		9.00/20	Ford	8-3½x3¾	239	6.4	180	100-3800	3-2½x4.71	N	F and BL	12	Cla R1250	SF	5.67–6.83	Ford	F61HV	635	1033 Co	TX	82	7 1/4x3 3/8x 47	CT f
	(C) F2X34-0		135	224	34000	♣8587	7.50/20		9.00/20	Ford	8-3½x3¾	239	6.4	180	100-3800	3-2½x4.71	N	Ford and BL	12	Cla R1250	SF	5.67–6.83	Ford	F61HV	635	1033 Co	TX	82	7 1/4x3 3/8x 47	CT f
	(C) F4X26 4R		144	210	26000	♣6300	7.50/20		8.25/20	Ford	8-3½x3¾	239	6.4	180	100-3800	3-2½x4.71	N	Ford	8	Ford	SF	6.07–10.5	Ford	F61HV	502	836 Co	TX	82	7 1/4x3 3/8x 47	CT f
	(C) F4X27-0		144	210	27000	♣6300	7.50/20		8.25/20	Ford	8-3½x3¾	239	6.4	180	100-3800	3-2½x4.71	N	Ford	8	Ford	SFd	6.07–10.5	Ford	F61HV	502	836 Co	TX	82	7 1/4x3 3/8x 47	CT f
	(C) F4X29 4R		144	210	29000	♣7000	7.50/20		8.25/20	Ford	8-3½x3¾	239	6.4	180	100-3800	3-2½x4.71	N	Ford	16	Eat 1350	SF	6.07–10.5	Ford	F61HV	502	836 Co	TX	82	7 1/4x3 3/8x 47	CT f
	(C) F4X30-0		117	180	30000	♣7200	7.50/20		8.25/20	Ford	8-3½x3¾	239	6.4	180	100-3800	3-2½x4.71	N	Ford	16	Eat 1350	SFd	6.07–10.5	Ford	F61HV	502	836 Co	TX	82	7 1/4x3 3/8x 47	CT f
	(C) C2X26 2F		157	234	26000	♣5500	7.50/20		8.25/20	Chevrolet	6-3½x4½	235.6	6.1	192	93-3100	4-2½x5	N	Chevrolet	8	Cla R1250	SF	.5.67–6.83	Chevrolet	C61HV	546	780 Co	2I	82	7 1/4x3 3/8x 47	CT f
	(C) C2X26 2F		157	234	26000	♣5500	7.50/20		8.25/20	Chevrolet	6-3½x4½	235.6	6.1	192	93-3100	4-2½x5	N	C and BL	12	Cla R1250	SF	.5.67–6.83	Chevrolet	C61HV	650	1033 Co	TX	82	7 1/4x3 3/8x 50	CT f
	(C) C2X34-0		141	224	34000	♣8200	7.50/20		9.00/20	Chevrolet	6-3½x4½	235.6	6.1	192	93-3100	4-2½x5	N	C and BL	12	Cla R1250	SF	5.67–6.83	Chevrolet	C61HV	650	1033 Co	TX	82	7 1/4x3 3/8x 50	CT f
	(C) C4X26 4R		145	212	26000	♣6120	7.50/20		8.25/20	Chevrolet	6-3½x4½	235.6	6.1	192	93-3100	4-2½x5	N	Chevrolet	8	Chevrolet	SF	.6.41–11.1	Chevrolet	C61HV	546	780 Co	2I	63	7 1/4x3 3/8x 47	CT f
	(C) C4X27-0		145	212	27000	♣6217	7.50/20		8.25/20	Chevrolet	6-3½x4½	235.6	6.1	192	93-3100	4-2½x5	N	Chevrolet	8	Chevrolet	SFd	.6.41–11.1	Chevrolet	C61HV	546	780 Co	2I	63	7 1/4x3 3/8x 47	CT f
	(C) C4X29 4R		117	184	29000	♣6953	7.50/20		8.25/20	Chevrolet	6-3½x4½	235.6	6.1	192	93-3100	4-2½x5	N	Chevrolet	16	Eat 1350	SF	7.47–12.9	Chevrolet	C61HV	512	836 Co	TD	63	7 1/4x3 3/8x 47	CT f
	(C) C4X30-0		117	184	30000	♣7200	7.50/20		8.25/20	Chevrolet	6-3½x4½	235.6	6.1	192	93-3100	4-2½x5	N	Chevrolet	16	Eat 1350	SFd	7.47–12.9	Chevrolet	C61HV	512	836 Co	TD	63	7 1/4x3 3/8x 47	CT f

♣Includes Cab. ● Rear only: Front 12.00/24. ♦ Rear only: Front 11.00/24. ♦ Auxiliary transmission, Spicer 8031.



LEFT. E. A. Hulbert and Carl F. Bachle, shown with the largest 12-cylinder, 810 hp unit designed for combat vehicles. RIGHT. Truck in foreground is powered with a 200 hp engine weighing 2400 lb. One in rear has a Continental 250 hp engine weighing 777 lb, providing more than 1600 lb greater payload capacity

Continental Engines

corresponding power, including the latter engine's radiator, water pump and other vital accessories. The same air-cooled engine, because it can be operated in a vertical position, requires little more space than the liquid-cooled engine requires for radiator and fan alone. The saving of over 1600 lbs. in engine weight not only will be of utmost importance to the army in transporting combat vehicles to the front lines by plane, but also increases both payload capacity and cargo space, which are of prime importance.

Army officials also point out that the saving of 1600 lbs. in the weight of the 250-hpr. engine, if translated into proportionate savings over the entire engine line, will mean an enormous saving in steel, aluminum and other metals in war time.

Twice The Payload

For inter-city operations, the Coca-Cola Bottling Works Co., Cincinnati, uses this new specially constructed Trailmobile platform trailer which practically doubles the payload of the van trailers previously used. The new unit can haul 924 cases, loaded on 22 skids on pallets containing 42 cases each. By comparison to their van trailers which handled 600 cases, the new platform unit can be loaded or unloaded by one man using a forked-lift truck in one-half the time it formerly took two men on the smaller unit

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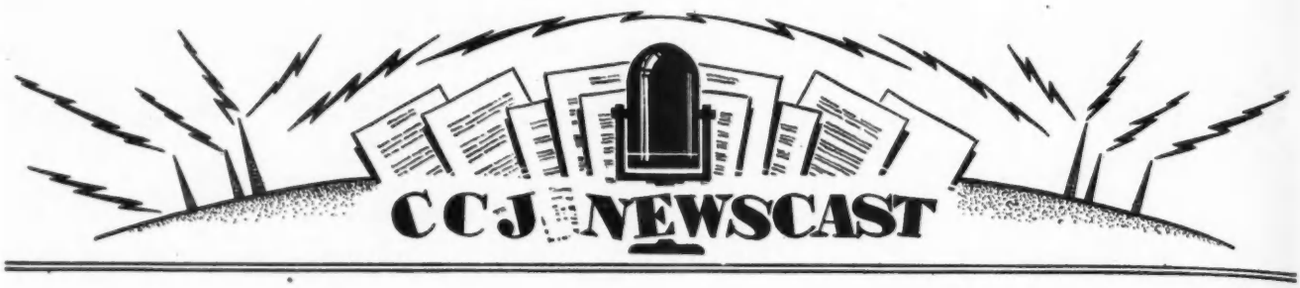
Division: MOOG INDUSTRIES, INC.
ST. LOUIS, MO.

MOOG
A GREAT NAME IN AUTOMOTIVE MAINTENANCE



DODGE TRUCK PRICES UP

For the second time this year, Dodge Division of Chrysler Corp. has raised prices of trucks. The increases range from $25 to $60, or slightly less than 2.5 per cent. Following are new factory retail prices, together with dollar increases, for some representative models.

	New Price	Increase
½-ton pickup	$1,263	$45
½-ton panel	1,448	35
¾-ton express	1,371	45
1-ton express, 116 in. w.b.	1,435	50
1-ton express, 126 in. w.b.	1,465	50
1½-ton ch. and cab, 128 in. w.b.	1,513	25
2-ton ch. and cab, 128 in. w.b.	1,861	50
2½-ton heavy duty 130 in. w.b. ch. and c.	2,915	60
3-ton heavy duty 130 in. w.b. ch. and c.	3,406	60

TRUCKLOADINGS DROP SLIGHTLY

The volume of freight transported by motor carriers in July decreased 6.0 per cent below June but increased 10.6 per cent over July, 1947, according to statistics compiled by the Department of Research, American Trucking Associations, Inc.

The ATA index figures, computed on the basis of the average monthly tonnage of the reporting carriers for the three-year period of 1938-1940 as representing 100, was 222.

TRAVEL DATA FROM PRA

Estimates just released by the Public Roads Administration indicate that passenger cars in the United States traveled 298.8 billion miles during 1947 while trucks traveled 65.8 billion miles. This, according to PRA figures works out to an average of 9697 miles for passenger cars and 9890 miles for all trucks annually. The latter figure, of course, includes a great number of farm trucks and other low mileage vehicles.

The passenger car averaged 14.95 miles per gallon of gasoline while the trucks averaged 8.96 mpg.

THERMOID VICE PRESIDENT

Lloyd R. Leaver, president of Joseph Stokes Company, Ltd., Welland, Ontario, Canada, was elected a vice-president of the Thermoid Co. at a meeting of the Board of Directors on August 9th.

DATES AND DOINGS

OCT. 18-22—National Safety Council 36th National Safety Congress and Exposition, Stevens Hotel, Chicago.
OCT. 25-29—Fleet Supervisor Training Course, New York University, New York City, N. Y.
NOV. 3-5—American Society of Body Engineers Annual Conventon, Rackham Memorial Bldg., Detroit, Mich.
NOV. 4-5—Arkansas Bus and Truck Assn. Convention, Marion Hotel, Little Rock, Ark.
NOV. 8-12—Fleet Supervisor Training Course, Georgia School of Technology, Atlanta, Ga.
NOV. 12-13—Associated Motor Carriers of Oklahoma Annual Convention, Skirvin Tower Hotel, Oklahoma City, Okla.
NOV. 13—New Hampshire Truck Owners Assn. Annual Convention, Manchester, N. H.
NOV. 15-19—First Annual Seminar in Problems and Policies of Motor Vehicle Fleet Management and Safety Supervision, New York University, New York, N. Y.
NOV. 15-19—Fleet Supervisor Training Course, University of Florida, Gainesville, Fla.
DEC. 2-4—Oregon Motor Transport Assn. Convention Multnomah Hotel, Portland, Ore.
DEC. 6—Missouri Bus and Truck Assn. Convention, Hotel Governor, Jefferson City, Mo.
DEC. 6-10 — Automotive Service Industries Show, Navy Pier, Chicago.
DEC. 9-11—Montana Motor Transport Assn. Convention, Northern Hotel, Billings, Mont.
JAN. 17-19—Truck - Trailer Mfrs. Assn. Inc., Annual Convention, Edgewater Gulf Hotel, Edgewater Park, Miss.
JAN. 27-28—National Council of Private Motor Truck Owners Annual Meeting, Claypool Hotel, Indianapolis, Ind.
MARCH 28-30—Society of Automotive Engineers National Transportation Meeting, Statler Hotel, Cleveland, Ohio.

EXCISE TAXES SOAR

Highway users paid at least $1,118-345,000 in emergency Federal automotive excise taxes during the fiscal year ended June 30—another all time high—and 14.6 per cent above the previous year's collections. Included in the figures are the highway users' share of the Federal taxes on gasoline, lubricating oil, new cars, motorcycles and trucks, parts and accessories, and tires and tubes. Not included are the taxes on pipeline transportation of petroleum, and transportation of persons and property.

N. J. TURNPIKE BILL PASSES

A bill to create a New Jersey Turnpike Authority has passed the legislature and awaits the Governor's signature. First project for the authority is an 85-mile toll highway that will extend from the new Dupont Bridge across the lower Delaware River to Woodbridge in central New Jersey, where it will connect with Route 100 which leads to New York City. Under the measure, credit of the state cannot be pledged against the turnpike authority's bonds.

TRUCK REGISTRATIONS UP

More than 275,000 new passenger cars and 93,000 new trucks will have been registered in July, R. L. Polk & Co., Detroit, statisticians for the automotive industry, have estimated on the basis of tabulations for 34 states. Should present ratios hold in states still to be tabulated, the totals for July in new passenger cars will pass the 246,926 new cars registered in June by a substantial amount.

Fifty-three thousand, five hundred and ninety-four new trucks had been registered in 35 states tabulated for July, as compared with 41,259 units registered in July, 1947, from the same states. The total for the month will be greater than the 87,324 new trucks registered in June from all states, but less than the record-breaking month of 108,168 in April and the 100,614 units registered in May.

SAFETY SECTION UNDER STUDY

The National Committee on Street and Highway Safety of the American Trucking Associations, Inc., has asked the association's Executive Committee to discontinue the Present Section of Safety and Operations and form in its place an ATA Council of Safety Supervisors, to be composed of truck fleet safety and personnel directors and others interested in the council's activities and programs.

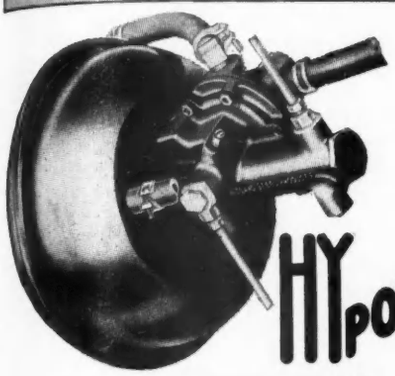
The committee's decision was: It provides that the present section continue its work until the new council has been set up and can begin functioning.

The plan was submitted by Ed J. Buhner, president of ATA, who said the organizational meeting of the new committee marked the beginning of a program of safety work under its supervision which probably will continue as long as the trucking industry maintains a national organization set-up.

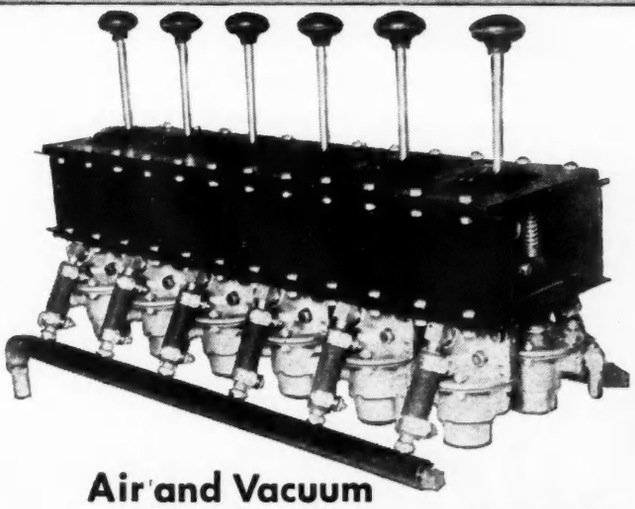
John M. Akers, Akers Motor Lines, Gastonia, N. C., member of the committee, stressed the importance of having the active support and interest of the present membership of the Safety and Operations Section and pointed out that many of the problems incident to safety promotion involve technical and other aspects which can be handled in a satisfactory manner only by persons who have expert knowledge of safety techniques.

(TURN TO PAGE 110, PLEASE)

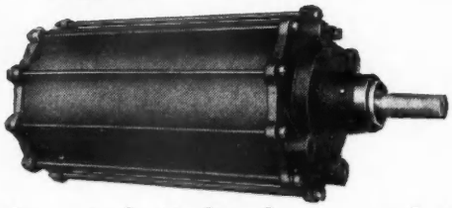
See MIDLAND for



HY POWER Unit

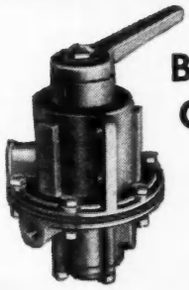


Air and Vacuum Shovel and Crane Controls



Industrial Cylinders and Valves

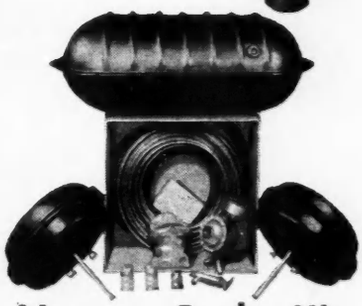
2-Speed Axle Valves



Bus Door Controls

Air Brake Kits

Slack Adjusters



Vacuum Brake Kits

THE MIDLAND STEEL PRODUCTS COMPANY

6660 MT. ELLIOTT AVENUE • • DETROIT 11, MICH.

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MIDLAND

POWER BRAKES

CCJ Newscast

(CONTINUED FROM PAGE 108)

ATA TO OPPOSE TOLL ROADS

A report of the American Trucking Associations' Committee on Taxation has recommended flat opposition to toll road construction, repeal of Federal automotive excise taxes and action by the state legislatures to prevent diversion of highway-user tax revenues to non-highway purposes.

The committee's report to the executive committee has also recommended creation of a highway study committee in each state, composed of state legislators, representatives of organized highway user groups and others concerned with highway planning.

1948 Domestic Motor Truck Factory Sales by Gross Vehicle Weight*

	5,000 & Less	5,001-10,000	10,001-14,000	14,001-16,000	16,001-19,500	19,501-26,000	Over 26,000	Total
January	28,690	15,458	11,641	17,685	5,615	3,166	1,638	83,893
February	32,776	15,623	12,308	16,733	5,983	3,666	1,800	88,889
March	44,110	21,222	15,890	24,237	6,708	4,437	1,968	118,572
April	43,441	20,671	13,910	21,163	6,667	4,039	2,020	111,911
May	37,114	17,132	13,898	18,386	4,734	4,018	1,627	96,909
June	37,244	19,741	13,503	18,794	6,310	4,371	1,792	101,755
July	35,481	20,716	13,105	19,038	5,063	3,501	1,345	98,249
Seven Months	258,856	130,563	94,255	136,036	41,080	27,198	12,190	700,178

* Automobile Manufacturers Association.

1948 Truck Trailer Production*

	July	Seven Months
Vans:		
Insulated and refrigerated	197	1,306
Furniture	77	313
All other closed top	1,285	10,369
Open top	98	1,100
Total Vans	1,657	13,088
Platforms:		
With cattle and stake racks	158	895
With grain bodies	66	318
All other	384	2,862
Total Platform	608	4,075
Tanks:		
Petroleum	266	1,968
All other	20	240
Total Tanks	286	2,208
Pole and Logging:		
Single Axle	193	1,446
Tandem Axle	167	1,088
Total	360	2,534
Low-bed heavy haulers	137	1,099
Off-highway	31	434
Dump trailers	36	324
All other trailers	117	1,568
Total Complete Trailers	3,232	25,380
Trailer Chassis	197	1,254
Total Trailers and Chassis	3,429	26,634

* Industry Division, Bureau of the Census.

Fits SHORT TRUCKS
Fits LONG TRUCKS

The CEMCO
Hydraul-Lift TAILGATE

In congested traffic areas, where maneuverability is important, the short, or "bob-tailed" truck is becoming increasingly popular. (See Atlantic Refining truck in cut.)

The CEMCO HYDRAUL-LIFT Tailgate is designed to fit on either short or long truck bodies. Fits old or new trucks—has one ton lifting capacity—and the lowest weight per pound of lifting capacity. Easily installed. Comes complete with power take-off and all mounting accessories. Convenient, safe, control lever.

Write for further details—Dept. 108

CEMCO INDUSTRIES, Inc.
Galion, Ohio

TRAILER INTERCHANGE PLAN PROPOSED

Members of the Common Carrier Conference, American Trucking Associations, have been asked to comment on a tentative Vehicle Interchange Code. While there has long been a considerable amount of trailer interchange on a "between friends" basis, heretofore there has not been a uniform vehicle interchange code.

Basically, the proposed interchange plan has the following provisions:

At the time of delivery of vehicle by lessor to lessee authorized representatives of such lessor and lessee shall make joint inspection of the vehicle and shall jointly execute the "INTERCHANGE RECEIPT AND INSPECTION FORM." Similar procedure is to be followed when the lessee returns the vehicle to the lessor.

Parties are required, under Commission regulations, to conform with requirements contained in Ex Parte MC-41 in regard to identification of vehicles.

Lessee agrees to confine operation of the leased vehicle to the routes, highways and

(TURN TO PAGE 190, PLEASE)

FRAM

REPLACEMENT CARTRIDGES

FAMOUS FRAM FILCRON OIL FILTER
"cleans the oil that cleans the motor," removes impurities formed within the engine.

Actually Cost You Less Per Clean-Oil Mile!

NO matter what type filters you've installed in your equipment, genuine Fram Replacement Cartridges cost you *less* per mile of efficient oil cleaning.

The carefully tested and controlled manufacture of genuine Fram Cartridges gives you an unsurpassed filter efficiency that lasts longer. The cost of Fram Cartridges is *rock-bottom* when compared with the lasting, constant efficiency they offer you. A Fram Cartridge will outlast cheaper types . . . pay for itself . . . in the end save you money on repair costs and maintenance.

Prove it yourself. Make this test . . . put Fram Filters on your fleet. If you are not convinced that they do a better job, cost less per clean-oil mile, return them to the Jobber who sold them to you under Fram's unconditional money-back guarantee. For more information write: Fram Corporation, Providence 16, R. I. *In Canada:* J. C. Adams Co., Ltd., Toronto, Ontario.

NEW FRAM GASOLINE FILTER
really removes both solids and water, protects finely adjusted carburetor mechanisms.

NEW FRAM CRANKCASE AIR FILTER
replaces conventional breather caps, protects engine where most dirt enters the crankcase.

FREE! FRAM WALL CHART

Tell at a glance what Fram Cartridges fit any make filter! Ideal for fleet garages. EXTRA—check below if you also want a convenient, individual chart on which you can list the correct Fram Replacement Cartridges for your specific fleet only. *Mail coupon below, today!*

FRAM CORPORATION, PROVIDENCE 16, R. I.
- ☐ Please send me immediately FREE FRAM WALL CHART on Cartridges.
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NAME .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....
Total number of vehicles in fleet .....
Name of Jobber purchased through .....

FRAM *Oil Air Fuel* FILTERS

...JOHN E. JOHNSON as general truck sales manager and FRED FALBERG as factory manager of the GMC Truck & Coach Division of General Motors. JOSEPH P. LITTLE, who has been assigned to the staff of M. D. Douglas, general manager of the division.

....these changes in the organization of the General Motors Corp.: HARLOW H. CURTICE, formerly general manager of the Buick Motor Division, as executive vice-president of General Motors. WILLIAM F. HUFSTADER, formerly general sales manager of the Buick Division, now a vice-president of General Motors in charge of the Distribution Staff, succeeding W. C. LEWELLEN, resigned. IVAN L. WILES, Buick comptroller, succeeds Mr. Curtice as general manager.

FOR SAFER DRIVING

•

FOR GREATER CONVENIENCE

NORLIPP

Improved

TRUCK MIRRORS

The NEW ADJUSTABLE stop on the Norlipp Nos. 425 and 426 Truck Mirrors offers greater security of placement, yet wider flexibility in moving mirror for driving convenience. It holds mirror in exact position while driving, yet when truck is to be backed or driven into a narrow place, mirror and arm may be raised and then returned to former position without use of tools.

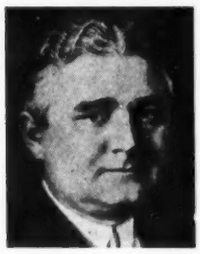
New cab mounting of one piece stamping adds durability to mirror. The diameter of telescopic arm has been increased to 5/8 inch. This larger diameter helps eliminate vibration. Water-proof construction—finished in durable baked enamel.

See your jobber for complete details

THE NORLIPP *Company*

5925 S. LOWE AVE., CHICAGO 21, ILL.

. . . RICHARD W. SHANKLIN, former sales manager of the Wholesale Division, The White Motor Co., Cleveland, named New England regional manager.



. . . JOE BURKE, appointed to the post of director and sales manager, Oltman-O'Neill, manufacturers of van and house delivery truck bodies.

. . . NEIL MOORE, as service division director of a newly created post, Federal-Mogul Corp., Detroit.

. . . ROBERT R. RECTOR, as district representative for the Southern Division of the American Coach & Body Co., Cleveland, Ohio.

. . . ROBERT SIMON, newly elected president of the Davis-bilt Products Co.

. . . WILLIAM H. STARBUCK, appointed assistant general sales manager of the Kellogg Division of the American Brake Shoe Co.

. . . F. J. HOOD, elected president of Ansul Chemical Co., Marinette, Wis.

(TURN TO PAGE 138, PLEASE)

The Du Pont "Dulux" Way to
A PERFECT REFINISH JOB!

1. For quick, easy clean-up:

DU PONT PREP-SOL

Start jobs *right* . . . with a Prep-Sol clean-up! Prep-Sol slightly softens the old finish, quickly removes grease, tar and traffic film . . . prevents foreign matter being sanded into the old finish . . . promotes good adhesion of the new finish.

2. For maximum adhesion:

DU PONT PREPARAKOTE

Here's a primer that goes on easily, dries quickly . . . *and stays put!* It's specially formulated to work *with* DULUX in creating superior refinish jobs. PREPARAKOTE *speeds* the job along . . . you don't have to wait for it to "flash" between coats . . . and it's ready for final sanding in four hours.

3. For "smooth sailing" all the way:

"DULUX" PUTTIES and THINNERS

It pays to use the best with the best, that's why so many paint shop foremen specify DULUX all the way. DULUX Putties come in two grades, Glazing and Hard, for every type of putty job. DULUX Thinners are *reliable* . . . and help move work along. VARI-TEMP Thinner, for instance, can mean the difference between top efficiency and a "slow" shop on cold, damp days or in hot, muggy weather.

4. The finishing touch for beauty and durability:

DU PONT "DULUX"

The best judges of a finish's performance are the men who operate truck and bus fleets . . . and the men who keep them painted. Over the years the majority have chosen DULUX . . . on the basis of proved superiority *on the road!* They *know* DULUX stands for a better-looking fleet . . . and durability that stretches the time between repaints.

Yes, DULUX *all the way* is the formula for fleet finishing efficiency. E. I. du Pont de Nemours & Co. (Inc.), Refinish Sales, Wilmington 98, Del.

DU PONT

REG. U. S. PAT. OFF.

DULUX

REG. U. S. PAT. OFF.

Enamel

BETTER THINGS FOR BETTER LIVING
.. THROUGH CHEMISTRY

FLEETMEN'S LIBRARY

A Review of Booklets and Catalogs Fleetmen Will Find Helpful

STENCIL BOOKLET, a 16-page, two-color publication showing how ready-cut masks and stencils povide a fast, easy way of applying designs or lettering to vehicles. Samples of designs as well as actual applications are shown in color. C. O. Dicks Co., 8544 Grand River, Detroit 4, Mich.

PLAIN HORSE SENSE, a 16-page booklet covering interesting facts on the trucking industry. Fruehauf Trailer Co., Detroit, Mich.

LANDIS TOOL CATALOG, outlining in 28 pages the company's standard and special purpose cylindrical grinders. This includes universal, plain, roll, crankshaft, cam, valve, multiple wheel and race grinding machines. Landis Tool Co., Waynesboro, Pa.

SUNNEN AUTOMOTIVE CATALOG, a 24-page publication listing and describing the company's line of tools for fleet shops. Sunnen Products Co., St. Louis, Mo.

K-D CATALOG No. 24, containing listings and descriptions of over 100 special tools for vehicle service. K-D Manufacturing Co., Lancaster, Pa.

PORTABLE AIR COMPRESSORS, an 8-page brochure showing the Pac-Air portable air compressor, with power tools available with the machine. Ingersoll-Rand Co., Phillipsburg, N. J.

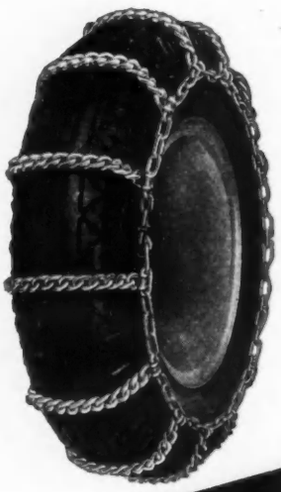
BRUSH CATALOG, a 56-page publication, illustrating and describing brushes of all types for painting, cleaning and general maintenance. David Linzer & Sons, Inc., 10-20 Astor Place, New York, N. Y.

SOLDER BULLETIN, a new 4-color book providing points to consider in determining solder grade and size for a given job, melting points and feet per pound, with other pertinent information. Division Lead Co., 836 W. Kinzie St., Chicago, Ill.

CLUTCH CATALOG, a 16-page, 2-color catalog devoted to the new Morse-Formsprag Full Complement Over-Running Clutch, its construction, development and working principle. Morse Chain Co., 7601 Central Ave., Detroit, Mich

NATIONAL DIRECTORY OF SAFETY FILMS

Prepared by the National Safety Council in cooperation with Business Screen Magazine. A comprehensive listing of 403 motion pictures and slidefilms, both sound and silent, for safety education within business and industry, on the farm, in homes and schools and on the streets and highways. Classified and indexed, with film synopsis, type, source and availability for purchase, rental or loan. National Safety Council, 20 North Wacker Drive, Chicago 6, Ill. Price 25 cents.



STAY on the road and KEEP moving with...

CLAW* TIRE CHAINS

They GRIP because they CLAW*

They're tough... they last... and that famous CLAW edge design really bites into hard ice and snow. Ask the biggest car and truck fleet operators why they stick to CLAW chains year after year. CLAWS are "traction insurance" and cost a whole lot less than delays and accidents.

COLUMBUS McKINNON Chain CORPORATION

General Offices and Factories: Tonawanda, N. Y.

Plants at Angola, N. Y.; St. Catharines, Ont., Can.; Vereeniging, So. Africa

BOOTHS B-23-25 . . . A.S.I. SHOW . . . CHICAGO . . . DECEMBER 6-10

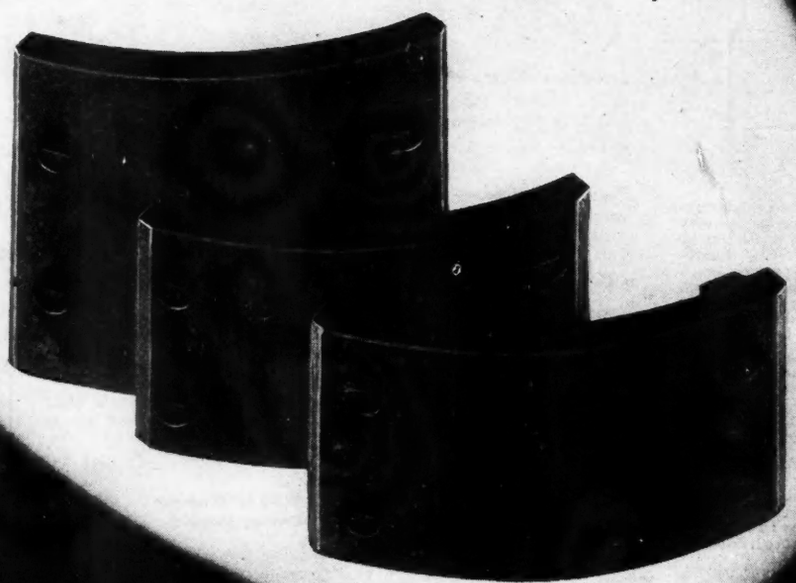
"I must confess, they do have a way of making a guy like to work for 'em."

Thermoid

THERMO-BLOCKS

Thermo-Blocks are built for heavy duty service. They always give top performance under all operating conditions. Their longer life reduces downtime, lowers maintenance costs. Get the Thermo-Blocks especially designed for your units. Use them on all heavy duty re-line jobs.

Thermoid Company, Trenton, New Jersey



The "Longer-Life" Line for heavy duty service

New Products

(CONTINUED FROM PAGE 63)

The solderless repair type terminal features the same construction and provides a new method for attachment of the cable to the terminal. A collapsible brass tube is cast inside a steel ring which is threaded for a bolt and an alloy is cast around it. When the stud is tightened, the brass tube collapses against the strands of the cable, effecting a positive electrical and mechanical connection. AUTOMOTIVE RESEARCH LABORATORIES, Muncy, Pa.

Use Free Postcard For More Details.

P46. Engine Pre-Heater

Electric plug-in type element heats the coolant prior to starting the engine. Installation is made by drilling and tapping a ¼-in. hole in the head for the top connection, and by removing the ¼-in. drain plug from the block for the bottom connection. Fittings, tubing and plug connection are included. Unit may be plugged in for any length of time to set up coolant circulation through the engine block. Maximum temperature attained is 120 deg. Operating costs are said to be 1/3 to ½ cent per hour. JOHANSON MOTOR HEATER CO., Chicago, Ill.

Use Free Postcard For More Details.

P47. Graphite Lock Fluid

For frozen, sticking, rusted or worn locks, Lock Ease is said to supply a metal plating action and to leave a long-wearing graphited film to improve operation in either cold or hot weather. This penetrating fluid is also a rust preventive, cutting rust formation and reducing wear. AMERICAN GREASE STICK CO., Muskegon, Mich.

Use Free Postcard For More Details.

P48. 2-Ton Floor Jack

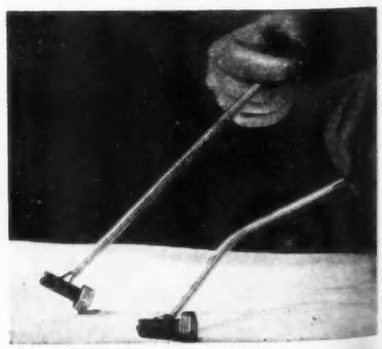
Wide caster brackets for greater stability and ball bearings swivel casters on rear wheels to improve the ease of spotting and zig-zagging feature this 2-ton hydraulic floor jack.

Streamlined, compact and low, the unit has a removable handle, a self-adjusting swivel rest plate, a drop forged steel valve body and a one-piece box-type steel frame. MANLEY DIV., AMERICAN CHAIN AND CABLE CO., INC., York, Penna.

Use Free Postcard For More Details.

P49. Special Tool

The Flex-O-Pic, designed for hard-to-reach places in specialized service such as carburetor, ignition, magneto and similar work. Shaft is a



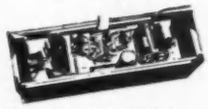
flexible cable enclosed in a housing holding retractable fingers which reach in and grab a tight hold on objects. It is acid proof and cad-

(TURN TO PAGE 120, PLEASE)

The NEW KOLD HOLD *Pakage* TRUCK UNIT for HIGH TEMPERATURE REFRIGERATION of PERISHABLES . . .

The New Kold-Hold Pakage Refrigeration Unit means lower costs . . . added dividends to you. Its simplicity of installation and operation is the highlight of its success wherever high temperature perishables are transported by truck. Check the following features of the New KOLD-HOLD PAKAGE REFRIGERATION UNIT.

Self-contained, adjustable to almost any truck. The Unit can be lowered to 46¾" for installing through truck door. When installed, height can be adjusted for 57" minimum to 78" maximum heights.



The electrically driven compressor builds up a charge of flint ice in the "Hold - Over" Plates, which provides ample refrigeration over a day's run.

Operates efficiently, economically in any properly insulated truck, regardless of age.

Easily installed — simply cut intake and discharge holes, push into place, plug into any 110AC-60 Cycle Circuit*.

Maintains inside truck temperatures of 45° F. to 50° F. over a full day's run.

Provides ample refrigeration even in extreme weather conditions.

The 1 HP Compressor operates for a few cents a day.

Recharging plates at any electrical outlet protects loads on long runs.

Dry and odorless — no bother. Dependability at lower cost.

Kold-Hold "Hold Over" Refrigeration Plates such as used in this unit have given satisfactory service for over 15 years.

*A 220V-60 Cycle Single Phase motor can be supplied on request.

Write for Complete Catalog Today

KOLD-HOLD PROCESSING TRANSPORTATION STORAGE protects every step of the way

Jobbers in Principal Cities

KOLD-HOLD MANUFACTURING CO., 620 E Hazel St., Lansing 4, Michigan

WE CALL 'EM BY THEIR FIRST NAME— "MANLEY"

SWIVEL WHEELS (optional at slight extra cost).

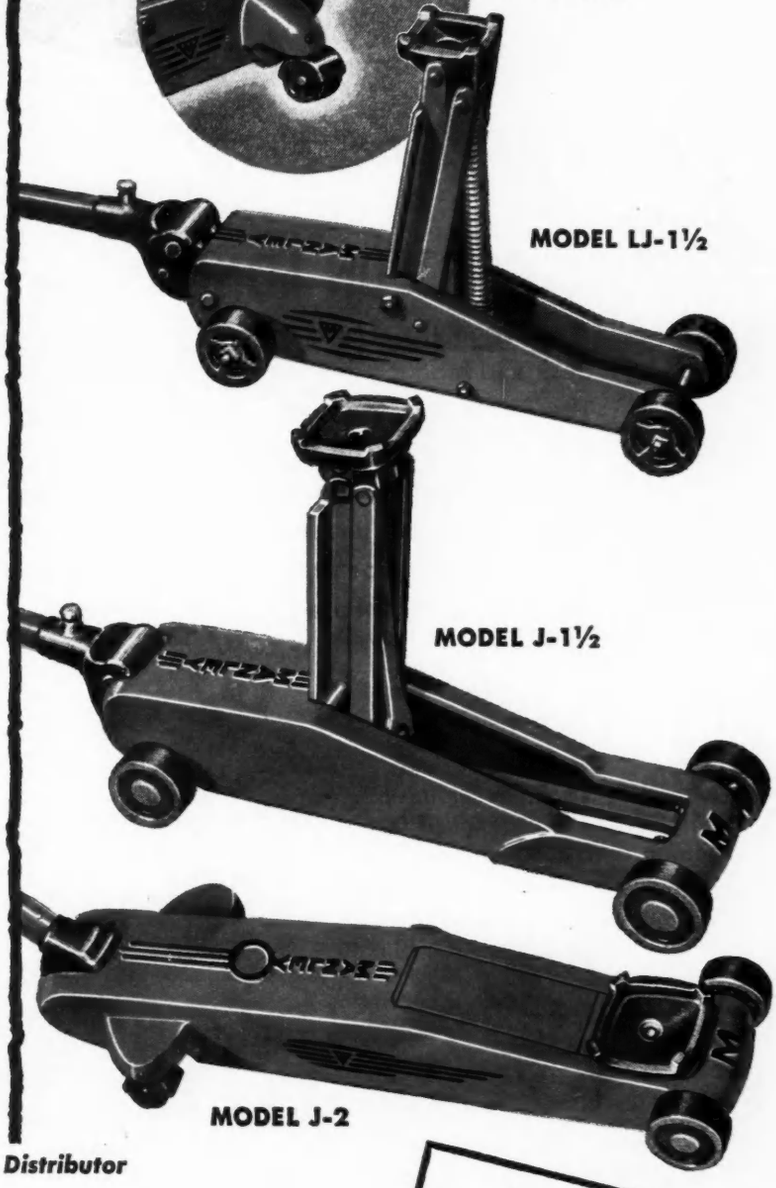
SURE, there are Manley Presses, Manley Floor Cranes, Manley Wrecking Cranes—a whole crew of minute-and-muscle-saving "Manleys." When the work gets jammed up, we can put through a lot more jobs when we can "let Manley do it."

These Manley All-Steel Jacks are precision-made. They're built to take punishment. They have what it takes to stay on the job where jacks are the busiest equipment in a busy shop. Complete hydraulic unit easily removed for cleaning or adjusting.

MODEL LJ-1½—A handy, light-weight, all-steel curb jack. Capacity 1½ tons. Available with regular or swivel wheels.

MODEL J-1½—A ruggedly-built jack for shop use. One-piece steel frame and steel lifting arm. Capacity 1½ tons.

MODEL J-2—for heavy duty service, 2-ton capacity. All-steel, box-type one-piece frame and steel lifting arm. Manley also offers MODEL J-4 (not illustrated) of full 4-ton capacity.



MODEL LJ-1½

MODEL J-1½

MODEL J-2

● ***Order From Your Manley Distributor***

ACCO

York, Pa. • Chicago • New York • Portland • San Francisco • Bridgeport, Conn.

MANLEY Automotive Service **EQUIPMENT**

MANLEY MANUFACTURING DIVISION
AMERICAN CHAIN & CABLE

Manley Equipment Saves Man Hours

New Products

(CONTINUED FROM PAGE 118)

mium plated and can be taken apart to be cleaned. EMMCO ENTERPRISES, Chicago, Ill.

Use Free Postcard For More Details.

P50. Soldering Iron Tip

Featuring a longer, narrow neck, a chromium-plated copper electrode and improved design to prevent heat loss, the tip is available for electric soldering guns. Heating time is 9 sec. Heat generated is sufficient for the average soldering job. CAL-PERRY CORP., East Orange, N. J.

Use Free Postcard For More Details.

P51. Anti-Rust Fluid

Layups and repair bills due to fuel lines and carburetors clogged by rust and scale formed through moisture condensation in the gasoline tank are said to be eliminated by a rust-preventing compound known as RD-119. The fluid is being added to all Sinclair petroleum products as they flow through pipelines to distribution points. Under this new process, all of the oil company's products, such as gasoline, kerosene, heating oil and diesel oil will contain an effective portion of the rust inhibitor. The additive is said to preserve the efficiency of petroleum products to which it is added. SINCLAIR REFINING CO., New York, N. Y.

Use Free Postcard For More Details.

P52. Surface Grinder

Faster time in grinding cylinder heads, block tops and other flat surfaces claimed for this new machine. Fully automatic, it grinds wet or dry with a 16-in. wheel powered by a 5 hp motor. Wheel speed is 1130 rpm.

Maximum length of work is 42 in. Maximum width, 11 in. Maximum heighth under holding clamps, 7¼ in. Work-holding feeds are 4 and 8 ft. per min. Return feeds, 6 and 12 ft. per min. Feed automatically disengages at end of table run.

The grinder may also be used on manifolds, pump bodies, and other types of work. VAN NORMAN CO., Springfield, Mass.

Use Free Postcard For More Details.

END

(Please resume your reading on P. 64)

"Marion" On the Job" Design

CUTS COST ON LONG HAULS

Marion's field-experienced engineers have designed bigger pay loads into trailer dump units. These popular Marion dumps are available in all sizes, furnished with double arm and telescopic hoist. They are designed under actual work conditions to stand up under the toughest hauling and dumping jobs. For literature and prices, write direct or to your nearest Marion Distributor.

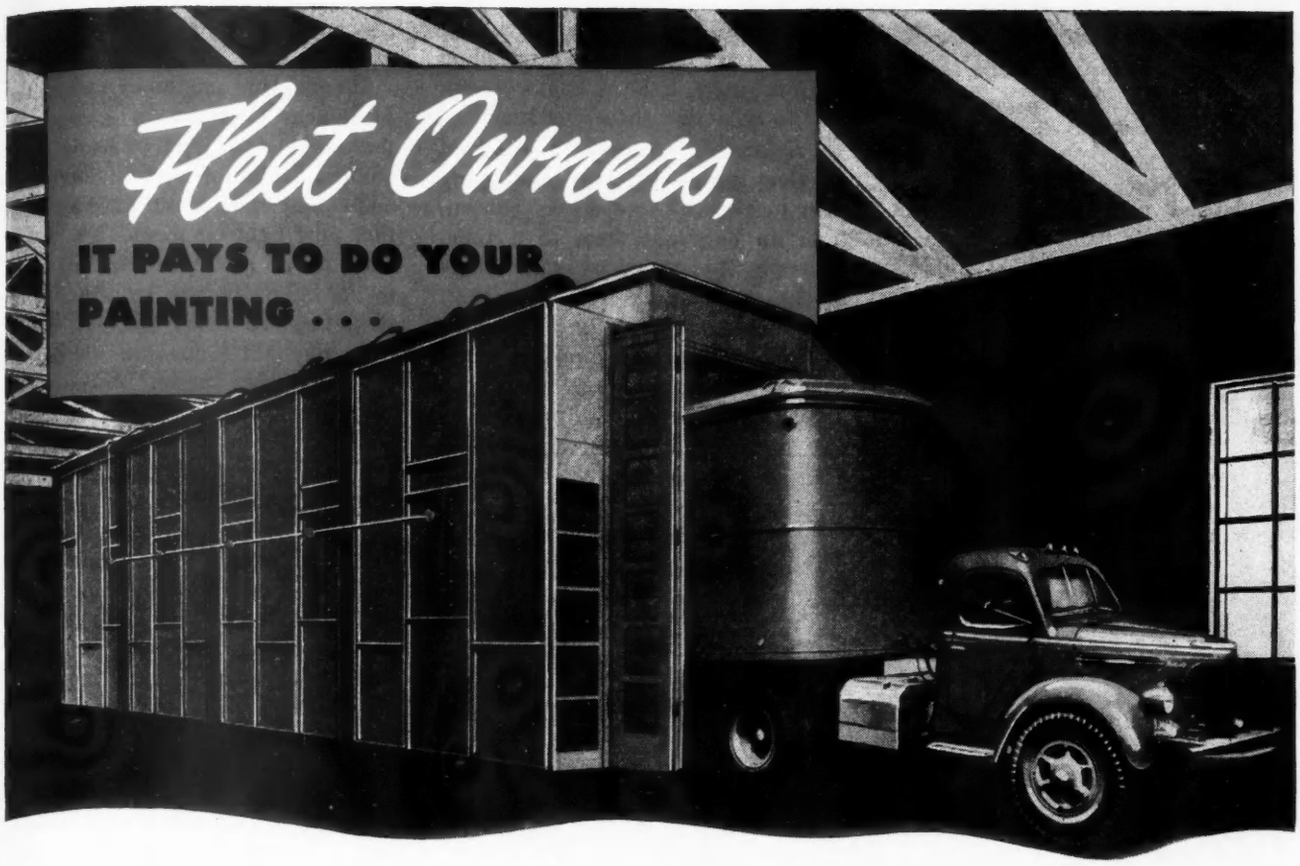
Standard 16 ft. trailer dump with HD-10 Hoist, designed for hauling coal, building material, gravel, crushed stone, etc.

MARION
DUMP BODIES and HYDRAULIC HOISTS

MARION METAL PRODUCTS CO.
MARION, OHIO

BUTLER ADVERTISERS

Butler Engineering Co., New Orleans, manufacturers of automotive, domestic and industrial Butler De-Scalers, has named Bauerlein Advertising, New Orleans, to handle future advertising.



These four essentials comprise the
COMPLETE PAINT SHOP

1. **A SPRAY BOOTH**... providing adequate exhaust, scientific illumination and positive dust protection.
2. **AN ASSORTMENT OF SPRAY EQUIPMENT** . . . for factory quality results on all kinds of jobs with any spray material.
3. **AN ADEQUATE AIR COMPRESSOR** . . . to provide ample low cost air for all paint shop and service requirements.
4. **HOSE AND CONNECTIONS** . . . designed and built specifically for spray painting service.

IN AN EFFICIENT—PRODUCTIVE—
DeVilbiss Paint Shop

Here in a single package is the complete equipment you need to handle a large volume of truck painting inexpensively. Operators can paint one or two more trucks per day with this equipment. And the sparkling "new truck beauty" of the finished job will command attention to make each truck your rolling billboard.

DeVilbiss Paint Shops are roomy, scientifically lighted and ventilated. They are equipped with the same highly perfected spray guns that are used on truck manufacturing production lines. And specialized equipment for the very important jobs of touchup, underbody coating, stenciling is also included.

These are only a few of the numerous practical features of Complete DeVilbiss Paint Shops. There are many more that will enable you to maintain your truck fleet in top condition at considerably less cost. Your DeVilbiss distributor will gladly give you the complete story.

THE DEVILBISS COMPANY • Toledo 1, Ohio
Canadian Plant: WINDSOR, ONTARIO

DE VILBISS *means* **Quality** *in all four . .*

DE V

SPRAY EQUIPMENT
EXHAUST SYSTEMS
AIR COMPRESSORS
HOSE & CONNECTIONS

Well-Lighted Shops

(CONTINUED FROM PAGE 57)

designed and so located to provide the desired protection from direct glare, work may be on shiny surfaces causing reflected glare that hinders seeing.

Shadows usually are caused by high machines, overhead equipment and sometimes by individual workers standing in their own light at their machines or work benches. By using enough light sources and installing them properly, lighting engineers are able to minimize disturbing shadows.

Bright and dark areas in the field of view may cause eye discomfort akin to glare. The eye may concentrate on only one item at a time. However, it is aware of other things in the surrounding field of vision. If a worker concentrating on his task in front of him is aware of a much brigter or much darker surface in his field of vision, that strongly contrasting surface may become as tiring as direct glare.

Illuminating engineers reduce the brightness contrasts in garages by the simple expedient of using light-colored paint on surrounding walls and ceilings and prescribing a system that puts light on them.

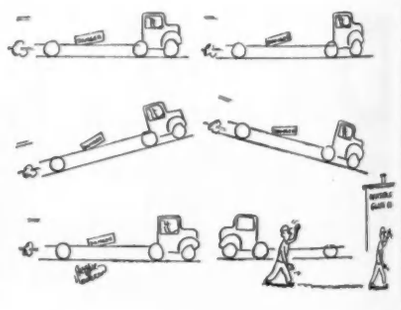
So far no reference has been made to the light admitted by windows or skylights. In many trucking operations daylight hours are the busiest time for the trucks. Maintenance may, therefore, of necessity be scheduled for evening when equipment can be serviced without loss of time. However, since some work is done by day, window lighting must be considered. Benches near windows certainly will have adequate amounts of illumination, but windows can be glare sources. Skylights will give some light to help general movement of vehicles and maintenance personnel, particularly in the storage area. Utilized to full advantage, daylight must still be supplemented by artificial lighting to balance varying conditions of daylight. This is especially true on dark days and through most winter months.

In each of the following specifications an anlysis will first develop the more complete permanent installation. Where alternatives permit, portable equipment will be discussed particularly for the benefit of the operator who rents garage space.

Storage and Parking

SINCE trucks are large and bulky, the primary requirement for space devoted to this use is room enough free from obstructions to permit easy parking. The general lighting for such space, must of necessity be overhead. Since no difficult seeing tasks are normally done in such areas, general illumination of 10 footcandles will satisfy

(TURN TO PAGE 125, PLEASE)



Let "TUFFY" carry the ball on your DECAL PROBLEM!

"Tuffy's" won his letter on the Palm Brothers all-star team of all-purpose decals. He's a flashy, colorful star . . . a fellow who wears well. A trusty man who can be depended on to buck the line of Old Man Weather's roughnecks . . . wind and rain, sun and snow.

As thousands of fleet owners can testify, Tuffy's no fair-weather friend. For he personifies the weather-resistance of Palm Brothers decals . . . the fighting power of their brilliant colors that keep your sales message scoring 24 hours a day.

Want to know more? Send for "A Moving Story for Truck Owners." Free while they last! Write to: Dept. 727

THE PALM BROTHERS DECALCOMANIA COMPANY

3736 REGENT AVE., CINCINNATI 12, OHIO

OFFICES IN ALL PRINCIPAL CITIES • SEE YOUR 'PHONE BOOK

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Well-Lighted Shops

(CONTINUED FROM PAGE 122)

most situations. In order to insure the uniformity of this level throughout the area, it is preferable to provide the lighting from a larger number of lower wattage lamps rather than fewer large units with the same total wattage. Convenient wall or pillar outlets for supplementary lighting should be made available to facilitate elementary servicing inspections or minor repairs. In checking tires or batteries portable units fastened to the head offer opportunities for a much greater dispatch than is possible when one hand must be constantly occupied holding a flashlight. Clean floors of light cement are a great advantage in all garage areas to make for easier seeing under vehicles with reflected illumination. Fig. 4.

Washing

THE need for this phase of maintenance will vary with the character of the business and the type of equipment used. Some trucking businesses require frequent, even daily washing of trucks. Convenient, thorough washing, done with dispatch, calls for at least 50 footcandles of light. Permanent units in sufficient number are recommended, located high enough and to the side so all surfaces of a truck and trailer being washed can be easily checked by the operator. Light colored tile walls often used for wash racks, together with white cement floors, reflect enough light to add substantially to the efficiency of washing operations.

Layout for washing suggested in the accompanying illustration has been developed for a variety of requirements.

Greasing: Lift or Pits

EITHER lift racks or pits may be so equipped with lighting as to insure the prompt completion of greasing and related service work. Pit lighting, provided by specially designed fluorescent or industrial units in wall niches, staggered on either side of the pit, are positioned to cover the under body area with ample light to see most tasks directly. The wall niche industrial units, it should be observed, are covered with protective glass to minimize lamp breakage and to provide for easy cleaning. Pit walls and floor are painted white and kept clean in order to utilize the lighting most efficiently.

Engine Repair Shop

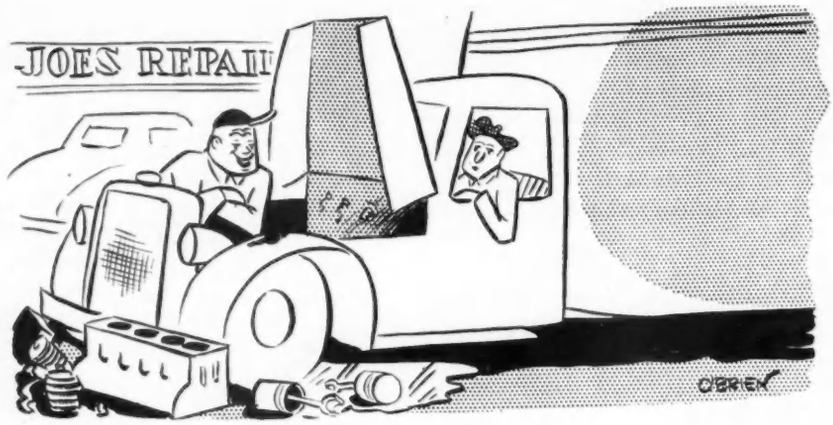
REPAIR work on truck engines and transmissions implies the need for a well equipped shop area. Permanent overhead lighting supplying illumination of the order of 50 footcandles is, usually, the basic provision. In some cases this may not be practical. An alternate solution is 30 footcandles of general illumination plus 20 to 30 from portable sources.

Each subdivision of the power shop area should have additional supplementary lighting designed to suit its special seeing tasks. This supplementary lighting will usually be provided by fixed or portable units.

Extra illumination up to 100 foot-

(TURN TO NEXT PAGE, PLEASE)

KEEP YOUR PAYLOAD UP..
COSTS DOWN
INSTALL
MAREMONT
HELPER SPRINGS
Individually designed helper springs for ½-¾-1-1½ ton trucks; also passenger cars.
Extra leaf sets make it easy to increase 1-1½ tons the load capacity of Ford and Chevrolet 1½ ton trucks.
• Low initial cost is rapidly repaid in extra payloads, lower maintenance charges, maximum protection.
Quick and easy to install, MAREMONT HELPER SPRINGS give your fleet extra payload capacity—at minimum maintenance cost! Cut down physical wear and tear, prolong the life and performance of your vehicles.
Made of fine quality silico-manganese steel, these superb springs are Individually Engineered for every popular model truck and car. This means a perfect fit, positive performance. Frame brackets are made of heavy malleable iron for longer wear and better service.
MAREMONT HELPER SPRING sets are complete with brackets, bolts and springs—ready for immediate installation. No special tools required.
See your nearest Maremont distributor or Spring Service Station for Maremont's complete line of springs, helper springs and spring parts.
ALSO MANUFACTURERS OF MAREMONT MUFFLERS AND TAIL PIPES
SINCE 1877
MAREMONT
SPRINGS
MAREMONT AUTOMOTIVE PRODUCTS, Inc.
1600 S. Ashland Ave. Chicago 8, Ill.



"Now try the starter!"

• I've lifted the lid for you to look inside. Check these features. They protect a P&D condenser against moisture.

Notice that (1) special sealing and insulating compound fills all spaces around winding and case. See how (2) plastic insulating washer is coated on both sides with neoprene to make the cap permanently moistureproof. Then there's (3) the metal grommet stamped around wire braid which also assures a strain-proof connection. Note that (4) our rolled and die pressed sealing method gives absolute sealing . . . closes the outer edges of gasket against moisture.

You see, this *extra quality* in the one complete P&D line is possible because P&D parts are manufactured *entirely in our own plant.* That's why these electrical parts point up your good jobs, keep your customers happy, and put more money into your cash register.

Drop me a line and I'll mail you your copy of Catalog No. 47 right away.

Turn Out Better Tune-up Jobs With PeeDee

GENUINE P&D IGNITION PARTS

P&D MANUFACTURING COMPANY, INC.
LONG ISLAND CITY 5, N. Y.
STARTING · LIGHTING · IGNITION

Well-Lighted Shops

(CONTINUED FROM PAGE 125)

candles for bench work can be specified as good shop practice. Skilled work of this character includes some of the most exacting seeing tasks found in industry. High labor costs can be made more productive if skilled workmen are aided with lighting that makes for easy seeing.

Body Shop

IN the body plants of truck manufacturers high level lighting has been the mark of good practice for years. Whether repair or painting is done in a big plant or in the garage of a fleet operator the seeing tasks have much in common. Large areas of metal surface, frequently with specular finishes, are typical of the work.

Large area, low brightness light sources such as the fluorescent lamp offer the most satisfactory general illumination for body shop areas. For inspections of various types portable equipments are offered in units that can accommodate most requirements.

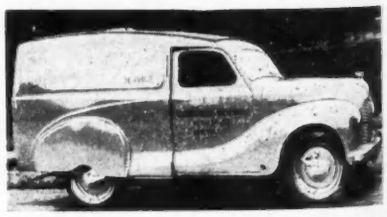
Painting, a distinct body shop operation requiring safety precautions with explosion proof electrical equipment, also requires high standard lighting provision. Semi-portable spray booths are often adopted in garages of limited size. This provides the isolation of this work without preempting space for this one purpose.

END

(Please resume your reading on P. 58)

Austin ½-Ton "Van"

The Austin Motor Co., Ltd. has started its post-war importation of commercial vehicles with the introduction of a ½-ton 40-hp panel truck "van". This truck has the same 4-cyl engine as the "A40" passenger cars introduced here



last December, an overhead valve engine with 7.2 compression ratio, and a 4-speed transmission. Overall length of the new model is 13-ft, 1½-in. The body has a capacity of 116 cu ft, and interior height of the body is 3-ft, 7-in. Road weight of the van is approximately 1900 lb. The New York City price, including duty and Federal tax is $1695

This Christmas give your men

Snap-on Tools

. . . THESE FINER TOOLS WILL HELP THEM DO A BETTER JOB!

Make this year's Christmas Gift or Bonus to your men a set of Snap-ons! It's a gift they want . . . a gift that will help them do a better job, faster! You'll find that every man in your shop knows and appreciates the excellent quality of these tools. Give Snap-ons . . . your men will appreciate your thoughtfulness!

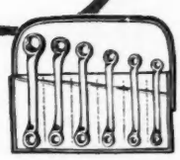
TOOLS MAY BE EXCHANGED

If the tools you give are duplicates of those your men already have, Snap-on will exchange them on a dollar-for-dollar basis.

LARGE, ROOMY SNAP-ON TOOL CHEST

26" wide, 12" deep and 14" high. All drawers fitted with "no-spill" slide runs. Plenty of room for long wrenches and hand tools.

39.95



DWARF BOXOCKET SET

They're strong! Short handles let you work in close places. Openings range from 5/16" to 3/4". Complete in kit bag.

7.80

SNAP-ON SHORT OPEN-END WRENCH SET

Forged from special alloy steel to withstand tough usage. Precision machined heads. Two sizes on each wrench; complete range from 3/16" to 9/16".

3.95

Give a Snap-on Gift Certificate

If you would rather not select the tools yourself, give this Gift Certificate (any denomination) and let the men select the tools they want!

SNAP-ON MIDGET BASIC SET

This basic set consists of a nut-runner and nine standard hexagon sockets plus three square sockets with 1/4" drive. In metal box.

8.50

0 TO 150 FOOT-POUND TORQOMETER

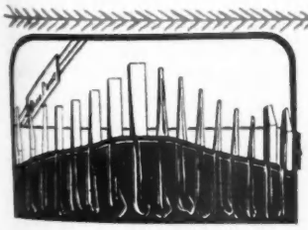
Eliminates guesswork on bolt tensioning and helps to avoid doing jobs over. There is no mechanical distortion when your men use a Snap-on Torqometer.

16.50

21-PIECE STANDARD SNAP-ON FERRET SET

This carefully selected assortment provides basic handle equipment and the 13 sockets needed for most nut-turning jobs in the 3/8" sq. drive size range.

27.65



SNAP-ON "SUPREME" CHISEL AND PUNCH SET

A complete 16-piece set that will do almost every punch and chisel job. You have the right tool for every job. Complete in kit bag.

15.00

SNAP-ON-TOOLS CORPORATION
8026-J 28th Ave., Kenosha, Wisconsin
Please send me these tools:

....
....
....
(How Many) (Name of tool or set)

☐ Have representative call

Name.....
Address.....
City..... State.....

SNAP-ON TOOLS CORPORATION • 8026-J 28th Avenue, Kenosha, Wis.

Job Par for Drivers

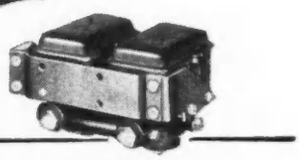
(CONTINUED FROM PAGE 37)

and domestic fuel oil customers. Consequently, a table showing the various averages, suitably divided into two groups, was prepared. This is shown in Fig. 3.

One additional comment seems necessary to anticipate questions regarding heavy seasonal deliveries. The same figures are used throughout the year because many of the factors mentioned occur constantly. Delays common to one season are offset by other delays peculiar to another season. While there may be no discussions of baseball or football, in January or February for example, snow and ice conditions at the delivery point will occasion delays not experienced in warm, fair weather. Also, conditions on night shifts are quite similar to conditions on the day shifts. The slight variations balance out. In any case, the chauffeur has the benefit of the doubt.

End Vapor-Lock and Fuel Pump Failure...with a

- Ends vapor-lock and fuel pump failure
- Operates only when needed
- Helps maintain tough schedules
- Insures quick starts in any weather
- Delivers a minimum of 15 gallons of gas per hour
- Reduces operating costs
- No fire hazard
- Available for 6 or 12 volt installations



110 DUAL PUMP

Dual fuel pump installations are recommended...

Whenever gasoline mileage is less than 5 or 6 miles per gallon.

Whenever gasoline consumption approaches 15 gallons per hour.

Whenever the total fuel line is over 20 feet long.

Each pump in a dual unit may be wired to a separate switch. When only one of the pumps is being used, the other acts as a booster and reserve pump, increasing the fuel delivery of the active pump as much as 30%.

STEWART-WARNER CORPORATION
Instrument Division
1876 Diversey Parkway, Chicago 14, Illinois

Product Delivery Time

PRODUCT delivery time was the easiest of all steps to average. Coupling and uncoupling of hoses, and opening and shutting of valves are relatively constant mechanical operations. Only weather conditions, principally mid-winter, introduced any appreciable variables, and those almost entirely with low viscosity products.

The principal operations considered are:

1. Remove hose from vehicle.
2. Attach to vehicle's discharge nozzles and customer's tank.
3. If metered delivery, insert delivery slips into meter.
4. Open valve.
5. Shut valve.
6. Permit complete drainage, take care not to spill product, wipe any unavoidable spillage.
7. Replace delivery hose.
8. If metered delivery, remove delivery slips.

The result of this study is shown in Fig. 4. It will be seen that both metered and gravity flow times are listed, and that only three different breakdowns are shown. This is because the flow time difference between the 1250, 2000, and the 2250-gal. loads are so small that only a stop watch, or the second hand of a standard watch, can measure it. Our timing intentionally is not that critical. The same consideration applies in the case of delivery by gravity flow.

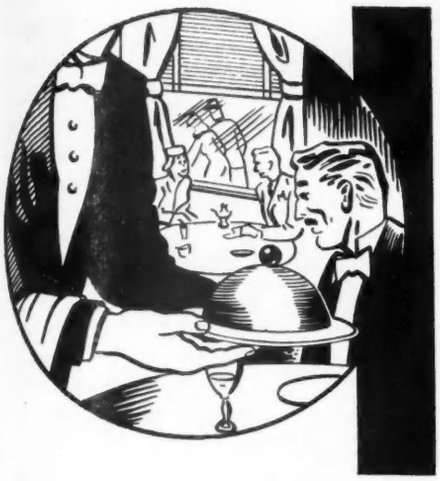
On the other hand, the flow time of low viscosity products, which are delivered principally in our large vehicles, is slowed up and proper allowances made. However, the same flow time applies to the higher viscosity products when delivered in the larger vehicles, as in the case of bulk shipments. In such cases, while the flow may be faster, the total load is larger. Again, any difference is in the chauffeur's favor.

Clean-up Time Study

THE final study covered the various step incidental to concluding a days work. This we called clean-up time, and it included the following steps:

1. Required servicing of vehicle.
2. Parking vehicle in proper space.
3. Reporting to shipper (dispatcher).

(TURN TO PAGE 130, PLEASE)



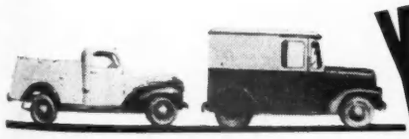
If you like the service, you come back for more.

It takes DEPENDABLE SERVICE to keep customers . . .

that's why YORK-HOOVER BODIES are re-ordered again and again

Low "per package" delivery cost service—dependable service — low maintenance service — that's what fleet operators are getting from YORK-HOOVER BODIES. And so the number of York-Hoover repeat customers is constantly growing.

This steady increase in customer approval of York-Hoover Bodies is the result of *sound engineering* and *fine craftsmanship,* factors which have kept York-Hoover a leader in the production of quality truck bodies for more than 55 years.



YORK.

YORK-HOOVER BODY DIVISION CORPORATION

PENNSYLVANIA

Job Par for Drivers

(CONTINUED FROM PAGE 128)

4. Making up cash, credit and other reports.

5. Ring out.

As in the case of plant time, these various steps are required and proper allowances made. However, the problems are not as great at the end of a day as at the beginning. Larger vehicles take longer to load than smaller vehicles, but the difference in servicing and parking larger and smaller vehicles are not as great. Moreover, congestion in shipper's office is not as great at the end of a day as at the beginning. All chauffeurs begin at the same time but some come in earlier than others, thereby lessening congestion.

After taking the above and other conditions into consideration, it was decided that a half hour was an adequate time allowance for the various tasks outlined.

Driver Cooperation Obtained

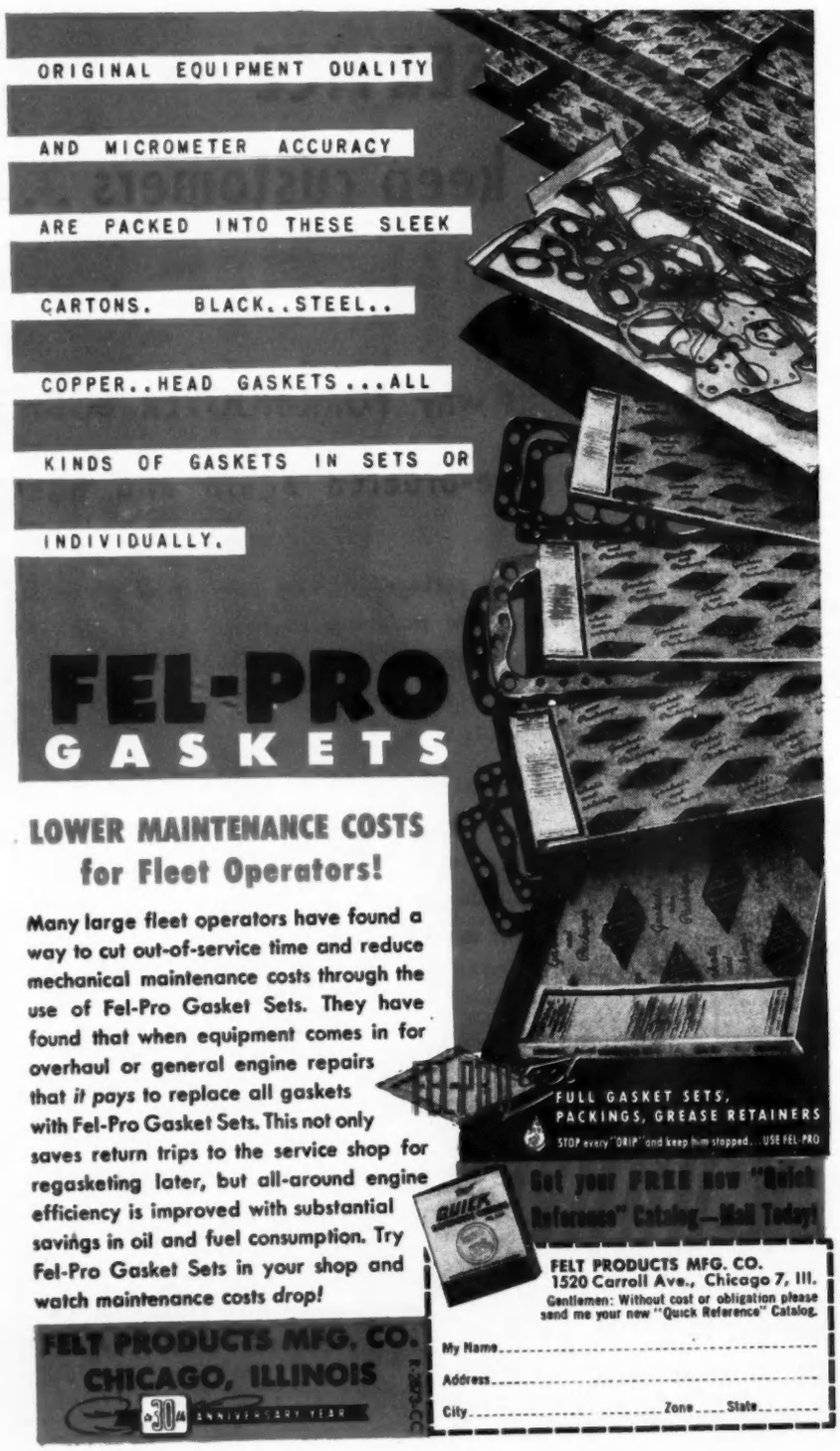
ONE of the important factors entering into all of these tests was driver cooperation. Naturally, they had to be sold on the idea that these tests were in their interest as well as ours. This they soon discovered when they saw how thoroughly we considered all the angles of their problems.

The studies were followed by consultations with management, chauffeurs, and all other personnel concerned. Furthermore, after all the basic work had been completed, we made a number of test runs to double-check our findings. This was followed by developing a satisfactory system of rating the chauffeurs, which will be explained in the following example.

How the System Works

TO ILLUSTRATE how all the foregoing studies fit into our control system, we will study a chauffeur's Motor Vehicle Operating Report, shown in Fig. 5. Chauffeur Jones started at 7 a.m. and ended his day at 5:30 p.m. Deducting a half-hour for lunch, he put in 10 delivery hours, as shown in the upper right portion of the form. Directly below we see that he started on his first trip at 7:45 a.m. and returned at 12:30 p.m. The destination was two delivery stops in Llanerch, Pa., a suburb of Philadelphia. After lunch, he made two more trips in the same vicinity. He left the plant at 1.15 p.m. and returned at 5 p.m. On both trips he carried the same quantity and type of products. His odometer readings,

(TURN TO PAGE 134, PLEASE)


ORIGINAL EQUIPMENT QUALITY
AND MICROMETER ACCURACY
ARE PACKED INTO THESE SLEEK
CARTONS. BLACK..STEEL..
COPPER..HEAD GASKETS...ALL
KINDS OF GASKETS IN SETS OR
INDIVIDUALLY.
FEL-PRO
GASKETS
LOWER MAINTENANCE COSTS
for Fleet Operators!
Many large fleet operators have found a way to cut out-of-service time and reduce mechanical maintenance costs through the use of Fel-Pro Gasket Sets. They have found that when equipment comes in for overhaul or general engine repairs that it pays to replace all gaskets with Fel-Pro Gasket Sets. This not only saves return trips to the service shop for regasketing later, but all-around engine efficiency is improved with substantial savings in oil and fuel consumption. Try Fel-Pro Gasket Sets in your shop and watch maintenance costs drop!
FULL GASKET SETS, PACKINGS, GREASE RETAINERS
STOP every "DRIP" and keep him stopped...USE FEL-PRO
Get your FREE new "Quick Reference" Catalog—Mail Today!
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Gentlemen: Without cost or obligation please send me your new "Quick Reference" Catalog.
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Address
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FELT PRODUCTS MFG. CO.
CHICAGO, ILLINOIS
30th ANNIVERSARY YEAR

"Sure, television! Why not?"

Walker Laminar* Oil Filter

WITH PATENTED CONSTRUCTION

Featuring the Guaranteed Walker Laminar

Replacement Cartridge for All Filters

It sets a new standard of filter performance—*guaranteed* performance. It's the Walker *Laminar* Oil Filter with three-dimension filtration—surface filtration, depth filtration and progressive filtration.

Layer upon layer of an entirely new, chemically pure filtering material (in the patented *Laminar* design) takes out even microscopic particles of harmful dirt and sludge; keeps oil clean for thousands and thousands of miles.

Result: Car-owners get greater motor protection, longer-lasting oil, better oil filtration, with Walker *Laminar*. Ask your Walker jobber about it today. Walker Manufacturing Company of Wisconsin, Racine, Wis. Also makers of Walker Silencers, Walker Jacks and Walker Electric Lifts.

Guarantee

The Walker Replacement Cartridge with patented Laminar construction is guaranteed against channeling, by-passing or migration of the filtering material throughout its active life. Any cartridge found not to comply with this representation will be replaced without charge.

* TRADEMARK

Job Par for Drivers

(CONTINUED FROM PAGE 130)

shown in the lower right hand corner of the form, shows 40 miles for each trip, or a total of 80 for the day. A clerk in the shipping department now has this form and is about to rate Jones.

The clerk also has before him the four tables illustrated. From Fig. 1, he finds that plant time for two loads of 3800 gal. of gasoline is 92 minutes.

Next he checks Jones' running time by referring to Fig. 2. Under the heading "Suburban," the clerk finds that the average running time in suburban Llanerch is 18 mph. The odometer reading is 40 miles per trip. He looks down the left hand column and finds that to make 40 miles at an average speed of 18 mph requires 133 min. Since Jones made two such round trips, the total elapsed running time is taken to be 266 min.

The next check covers customer contact time. Inasmuch as there were four stops, the clerk determines from Table 3 that 48 min. of contact time should have been ample.

Then he checks gasoline delivery time. By consulting Fig. 4, the clerk determines that it takes 50 min. to unload 3800 gal. of gasoline. Inasmuch as there were two such trips, the clerk allows 100 min.

To all of the foregoing figures, the clerk adds 30 min. for the final clean-up time.

Now a recapitulation of all of the checks made shows:

92	min.	Plant Time (two trips)
266	"	Running Time (two trips)
48	"	Contact Time (four stops)
100	"	Flow Time (four stops)
30	"	Clean-up Time (end of day)
536	"	Par Time for Day's Work

Now, from Jones' Motor Vehicle Operating Report the clerk knows that the chauffeur spent 10 hours in the process of delivering gasoline through the various steps outlined above. This amounts to 600 min. Inasmuch as par time is 536 minutes, the clerk calculates Jones' day's work to be 89 per cent of par, which is not good.

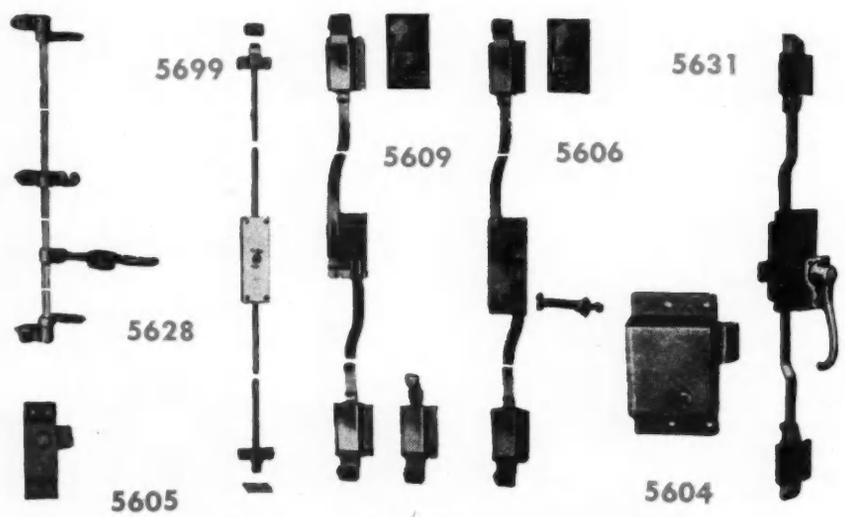
Actually, Jones' time is a little better than 89 per cent, as this example was done the short way to explain the procedure with minimum complication and confusion. The short cut was made through Fig. 2. Fleetmen who know the Philadelphia area will know that to get to suburban Llanerch from this plant, the driver would have to go through parts of

(TURN TO PAGE 136, PLEASE)

VERSATILE in Application TO LIGHT AND HEAVY TRUCK BODIES

EBERHARD *Purpose Tested*

LOCKS . . . are durably constructed for long, heavy usage and designed for pleasing appearance that blends in well with a majority of body designs. Simplified installation with flexibility in application characterizes the EBERHARD line of "Purpose Tested" Locks.



You are almost certain to be confronted with a need for one or more types of Eberhard Locks.

Familiarize yourself with the complete EBERHARD line of automotive hardware by writing *today* for the latest Eberhard Catalog.

EBERHARD *Long Run* TRUCK BODY FITTINGS

E

EBERHARD MANUFACTURING CO.

Division of the Eastern Malleable Iron Co. 2850 TENNYSON ROAD, CLEVELAND, OHIO

"S'okay, I'm getting it loose now."

(Advertisement)

STANDARD ENGINEER'S REPORT

RPM CALOL

TEST DATA

UNIT 6 cyl. gas Truck + Bus Engine

LUBRICANT RPM Heavy Duty Motor Oil

FUEL Chevron Gasoline

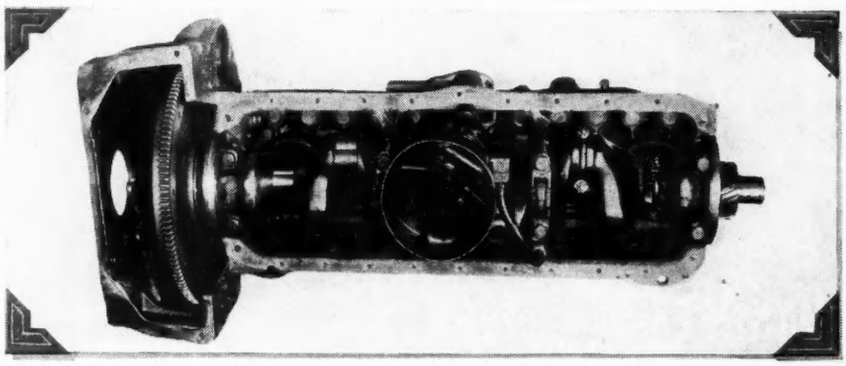
CONDITIONS max. engine loads for prolonged periods

FIRM Mountain Auto Line

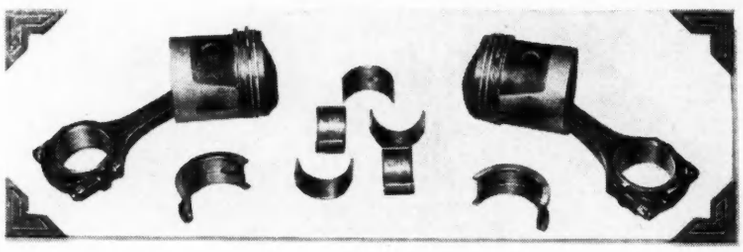
LOCATION San Bernardino, Calif.

TOUGHEST MOUNTAIN SERVICE PROVES RPM HEAVY DUTY KEEPS TRUCK AND BUS ENGINES CLEAN

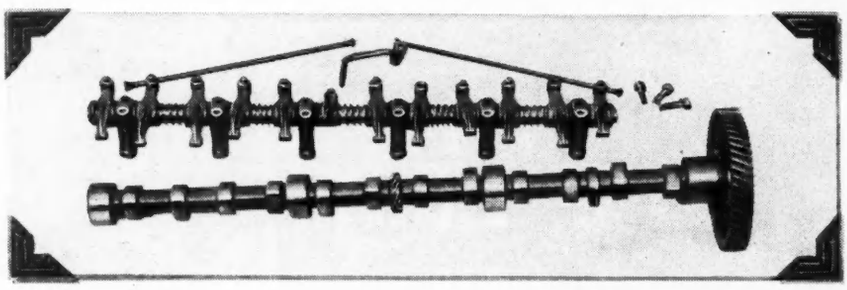
When this engine was pulled out of service for inspection, and the photographs were taken, it had operated on RPM Heavy Duty Motor Oil continuously for 45,000 miles—in service that is about as hard on equipment as any in the country. It is one of 21 units used on a mountain bus and freight run. They climb to a 5000-foot altitude in 15 miles without a stop. Even with 6-bladed fans, pressure-lubricated timing gears and 10-speed transmissions, crankcase temperatures soar above 240 degrees F.



As the pictures at right and above show, the crankshaft, bearings, pistons and rings from the engine were exceptionally clean. RPM Heavy Duty Motor Oil withstands the highest operating temperatures . . . sticks to the hot spots ordinary oils leave bare.



The camshaft was free from lacquer. Pushrods, timing gears and other parts showed minimum wear. RPM Heavy Duty Motor Oil resists oxidation, cleans engines of lacquer and maintains a tough lubricating film. It does this because of inherent properties of its selected base stocks and special compounds.



REMARKS: Many oils, competitive to RPM Heavy Duty Motor Oil, have been tested by Mountain Auto Line in their regular service. Tests have been made in all seasons of the year with atmospheric temperatures ranging from zero to 100°F. above zero in the shade. RPM Heavy Duty Motor Oil is the only oil used that meets every requirement of their engines and prevents clogging with lacquer.

STANDARD TECHNICAL SERVICE conducted and reported this test: If you have a lubrication or fuel problem, your Standard Fuel and Lubricant Engineer or Representative will give you expert help; or write Standard of California, 225 Bush Street, San Francisco 20.

Trademarks, "Calol," "RPM," Reg. U. S. Pat. Off.

STANDARD OF CALIFORNIA • San Francisco, Calif. STANDARD OIL COMPANY OF TEXAS • El Paso, Texas
THE CALIFORNIA COMPANY • Denver, Colo. THE CALIFORNIA OIL COMPANY • New York

Job Par for Drivers

(CONTINUED FROM PAGE 134)

South and West Philadelphia, where the running time is 11 and 14 mph, respectively, and not the faster time of 18 mph used in this example. However, regardless of this short cut in calculation, Jones' time still would be below par.

In as much as Chauffeur Jones did not report any detentions on his Motor Vehicle Operating Report, and assuming him to be one of our good chauffeurs, we will ascribe the delay to above-average traffic delays or unusual customer contact time loss. Consequently, this below-par day will be overlooked.

How Par Time is Maintained

HOWEVER, if Jones' record should continue below par on the next day or two, Jones will be asked to see his supervisor. In a pleasant manner, he will be shown his Motor Vehicle Operating Reports, and the below-par running time pointed out. He will be asked to pull his performance up to par. Usually, this is all that is needed to restore efficiency.

The nice part of the system is that it is not we, but Jones, who says that he has been inefficient. He filled out the form—nobody "Squealed" on him. The system practically eliminates argument; it is practically foolproof. Moreover, he cannot claim that we are "picking" on him or that we are asking the impossible. The pars are so fair—and freely admitted to be so by all of our drivers—that any good chauffeur can consistently turn in par or above-par performance, as most of our chauffeurs do.

There have been times when more stringent measures had to be taken. Therefore, we will assume that, although Jones' time has improved, it still isn't par; or that he go back to par but, shortly thereafter, hit another slump. In such a case, Jones will check in one day and find one of our chauffeur trainers at his side. The chauffeur trainer will ride with Jones all that day, and, if needed, for the next day or two, to determine the cause of Jones' below-par performance. Whatever it may be, Jones will be obliged to snap out of it.

We do all we can to encourage above-par performance. We do not pay bonuses or use any other incentives to keep drivers above par, but they do get proper recognition at chauffeur meetings and personal contacts with the management.

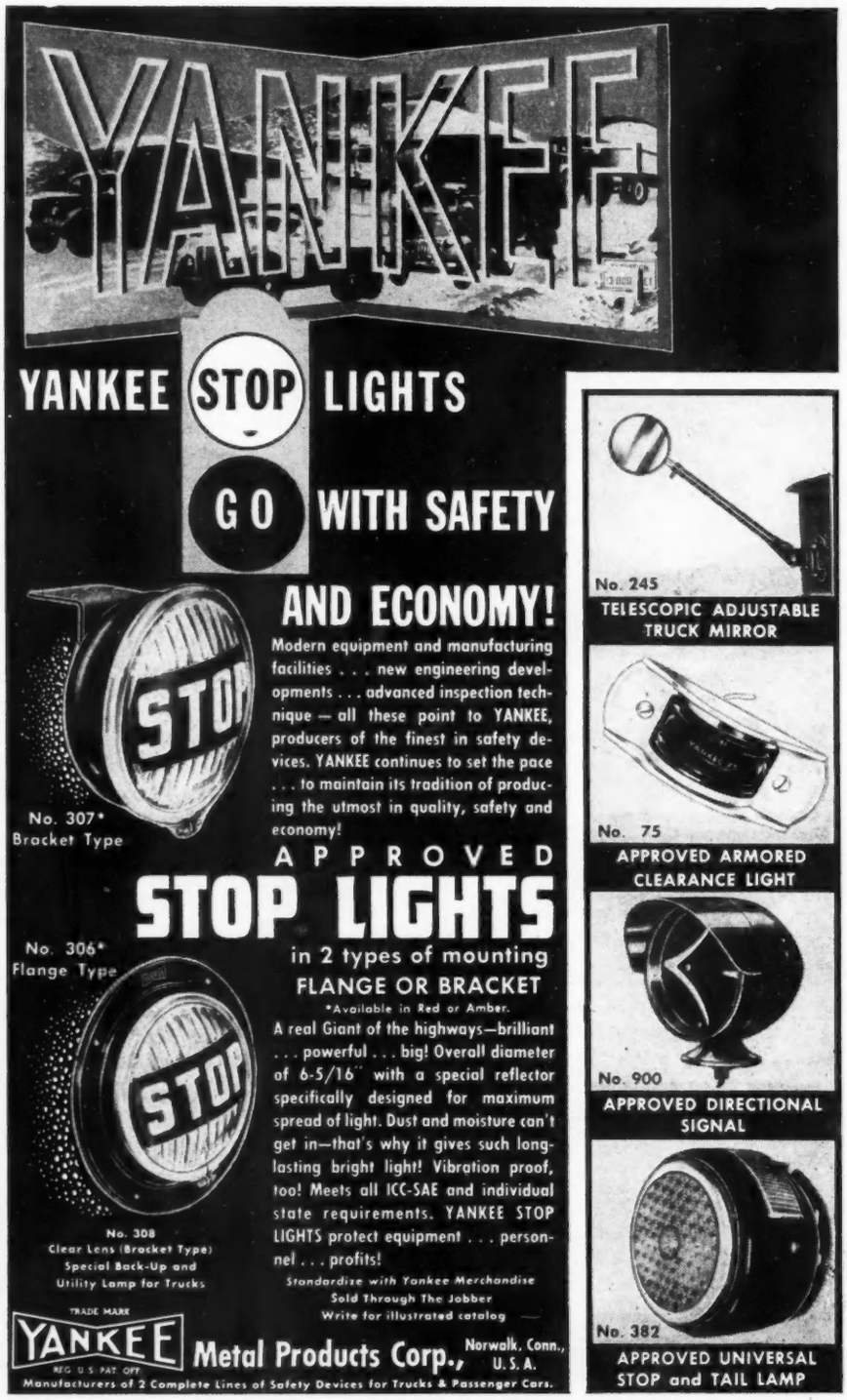
On the whole, the system has been very fruitful. It now has been in operation for four years and, after this period of trial, we can say that it is one of the most progressive innovations that we have developed.

We are constantly alert for changes in the standards as manifested by different sizes of equipment; newer, faster trucks, etc., so that always we that the par times represents fair standards against which to measure chauffeur performance.

It is our intention to continue with this system and to improve to whatever extent possible in the future.

END

(Please resume your reading on P. 38)


YANKEE
YANKEE STOP LIGHTS
GO WITH SAFETY
AND ECONOMY!
Modern equipment and manufacturing facilities . . . new engineering developments . . . advanced inspection technique — all these point to YANKEE, producers of the finest in safety devices. YANKEE continues to set the pace . . . to maintain its tradition of producing the utmost in quality, safety and economy!
No. 307* Bracket Type
APPROVED
STOP LIGHTS
in 2 types of mounting
FLANGE OR BRACKET
*Available in Red or Amber.
A real Giant of the highways—brilliant . . . powerful . . . big! Overall diameter of 6-5/16" with a special reflector specifically designed for maximum spread of light. Dust and moisture can't get in—that's why it gives such long-lasting bright light! Vibration proof, too! Meets all ICC-SAE and individual state requirements. YANKEE STOP LIGHTS protect equipment . . . personnel . . . profits!
No. 306* Flange Type
No. 308 Clear Lens (Bracket Type) Special Back-Up and Utility Lamp for Trucks
Standardize with Yankee Merchandise Sold Through The Jobber
Write for illustrated catalog
TRADE MARK
YANKEE
REG. U.S. PAT. OFF.
Metal Products Corp., Norwalk, Conn., U.S.A.
Manufacturers of 2 Complete Lines of Safety Devices for Trucks & Passenger Cars.
No. 245
TELESCOPIC ADJUSTABLE TRUCK MIRROR
No. 75
APPROVED ARMORED CLEARANCE LIGHT
No. 900
APPROVED DIRECTIONAL SIGNAL
No. 382
APPROVED UNIVERSAL STOP and TAIL LAMP

for Safety's Sake..

REPAIR with WAGNER LOCKHEED HYDRAULIC BRAKE PARTS

Turn out better brake jobs and help reduce automobile accidents.

Always use genuine Wagner Lockheed Hydraulic Brake Parts. These parts are of the same guaranteed, long-lasting quality as the Wagner Brakes originally installed by car, truck and bus manufacturers.

Wagner kits include all essential parts for a specific job, and come in sealed containers to eliminate all chance of parts being damaged or missing. Also available as individual parts and as completely assembled cylinders.

Wagner Lockheed Hydraulic Brake Parts are warehoused throughout the U. S. and Canada and, like Wagner Lockheed Hydraulic Brake Fluid and CoMaX Brake Lining, are available everywhere through Wagner jobbers.

Wagner Electric Corporation
6470 PLYMOUTH AVE., ST. LOUIS 14, MISSOURI

EVERY REPAIRMAN NEEDS

Bulletins HU-17G and HU-197...Tips for better Brake Service—free on request.

RELINE with Wagner CoMaX Brake Lining.

REFILL with Wagner Lockheed Hydraulic Brake Fluid.

Wagner Electric Corporation
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LOCKHEED HYDRAULIC BRAKE PARTS and FLUID · NoRal
CoMaX BRAKE LINING · AIR BRAKES · TACHOGRAPHS
ELECTRIC MOTORS · TRANSFORMERS · INDUSTRIAL BRAKES

HB-14

Introducing . . .

(CONTINUED FROM PAGE 112)

. . . W. F. ARMSTRONG, as general manager of the Chevrolet Motor Division, succeeding Nicholas Dreystadt, who died Sept. 3. Mr. Armstrong, a vice-president of General Motors, has been in charge of the manufacturing and real estate staffs since 1944.

. . . GILBERT M. VANHOESEN, as new district sales manager in the Philadelphia branch, The Autocar Co.

. . . LARS CARLSON, named to fill Brown Industries' newly created post of eastern United States manager in charge of national fleet trailer accounts, with headquarters in Chicago. R. D. SHAVER, from the Denver branch replaces Mr. Carlson as district manager in the Chicago area.

. . . J. C. KUHN, as general sales manager, Morse Twist Drill & Machine Co., New Bedford, Mass.

. . . ROBINSON F. BARKER, as assistant manager of plate glass sales for Pittsburgh Plate Glass Co.

. . . W. M. WATKINS, as district manager of Mack Trucks' Indianapolis Branch.

. . . S. CARLTON WILLIAMS, JR., promoted to eastern district manager for the Pyrene Mfg. Co., Newark, N. J.

. . . DR. HAROLD A. BEATTY, appointed to the newly-created position of assistant director of research at the Ethyl Corp. Research Laboratories in Detroit.

. . . WALTER W. KEMPHERT, as vice-president in charge of sales, Skilsaw, Inc., Chicago.

. . . MORGAN B. LAWTON, appointed to serve as manager of Lincoln Lubricating Systems, Inc., Cleveland, in addition to continuing as manager of the Lincoln Engineering Co. sales branch in Detroit.

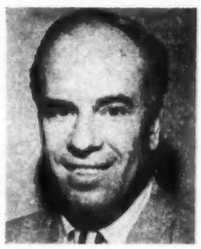
. . . L. S. MANN, appointed sales manager for automotive products, the Davison Chemical Corp., Baltimore, Md.

. . . JOSEPH G. HOWLAND, as advertising and sales promotion manager for Motorola Inc., Chicago.

DON'T BE A
Goat
How about it, boys? Whether it's your fault, or not, you're the goat when you drop a trailer. Even usual coupling fuss and bother are grief enough—especially when it's cold or rainy—but accidental uncoupling is really bad business.
SAFETY FIRST
That's why—when ASF engineers put 40 years of railroad coupler experience to work in designing a better 5th wheel—safety was their goal . . . safety that stays safe . . . safety with ease of operation. That's how Safety 5th Wheels got their name. They can't unlock accidentally. Yet a single, simple, one-hand movement is all that it takes for uncoupling.
EXPECT THE BEST
You'd expect the Nation's leading producer of cast steel for transportation purposes to build a 5th wheel right. And you'll not be disappointed. Before you equip another tractor, get the facts on Safety 5th Wheels. Types for every service. Automotive Division, American Steel Foundries, 400 N. Michigan Ave., Chicago 11, Ill.
The new Series 400-C. Dealers and distributors wherever you go.
Sockets on the plate fit well down over the trunnions so that tractor pull is transmitted in a straight line. Plate won't "lift" under power or braking.
A·S·F Safety 5th WHEEL

. . . J. W. DEVENNE, elected vice-president and general manager, The Western Express Co.

. . . H. R. BUTTS, appointed general sales manager, Wire Division, of The Electric Auto-Lite Co.



. . . JOHN H. POULSON, appointed to the board of regional sales supervisors, Eutectic Welding Alloys, Corp.

. . . MAX H. SMITH, left, newly appointed southern division manager and FRED VANZO, right, national sales supervisor, Toledo, for Electric Auto-Lite

(TURN TO PAGE 140, PLEASE)

FOR UTMOST RELIABILITY IN THE HEART OF THE FUEL SYSTEM

AVAILABLE FROM THE AC WHOLESALER

ALWAYS INSTALL A NEW AC FUEL PUMP

Then You Assure NEW Fuel Pump Service

AC

FUEL PUMPS

Your AC Fuel Pumps give you such dependable service and long life because *highest quality is built in,* from blueprints to finished products. There is one sure way to protect that reliability and durability—insist upon AC Pumps and Parts.

Always install NEW AC Fuel Pumps—to avoid short-lived repairs and early pump failures. New AC Fuel Pumps cost slightly more, but they are *worth* more, in peace-of-mind and service assurance. In fuel pumps, it isn't what you *pay*—it's what you *get.*

If You Repair, Use an AC Repair Kit or Diaphragm Kit

AC SERVICE FUEL PUMP

Fast service on AC products wherever you see this sign.

Introducing . . .

(CONTINUED FROM PAGE 138)

. . . WARREN A. BEMAN, of the Socony-Vacuum Oil Company, Inc., Albany, N. Y., transferred to the Chemical Products Division of the headquarters Lubricating Department, New York City, as a staff engineer. G. H. HOCKING, formerly a process products engineer in the Philadelphia Division, will replace Mr. Beman at Albany.

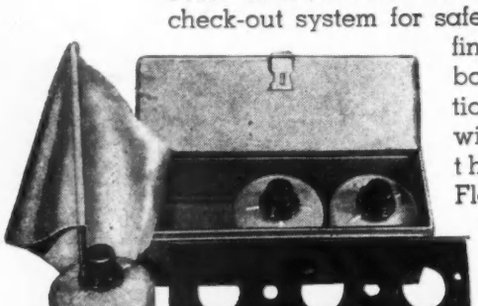
. . . FRANK J. MILLER, recently made general sales manager of New Departure Division of General Motors Corp. to succeed LESTER G. SIGOURNEY, retired. . . . LORNE F. LAVERY, formerly manager of the Detroit Office, becomes assistant general sales manager at Bristol, Conn. . . . CHARLES D. MCCALL, formerly manager of automotive sales at Detroit, succeeds Mr. Lavery as manager of the central region. . . . HOWARD A. OFFERS, sales engineer in the Chicago territory, becomes manager of the mid-western region with headquarters in Chicago. . . . RAYMOND J. LYNCH, formerly engineer of the Chicago office, is now supervisor of engineering for the central and mid-western regions.

. . . the following changes in Fruehauf Trailer Co.'s sales dept.: E. A. WATSON, former manager of the Detroit Branch, now assigned to the National Sales Div. . . . D. B. WALTER, as Detroit branch manager. . . . L. T. CRISWELL, as Detroit sales manager. . . . JAMES F. DUNCAN, as Louisville branch manager. . . . VICTOR GROSS, as Dayton branch manager. . . . VANCE HOWE, former Columbus manager is now national accounts manager in Detroit, succeeded by ROGER SULLIVAN in Columbus. . . . JOHN L. CROOKS now heads the Erie branch.

BOLSER
Safety Equipment

BOLSER
CHECK-IN-BOX FLARE
OIL BURNING FLARES MEAN ROAD SAFETY

Fleet owners who use the check-in and check-out system for safety equipment will find this Bolser metal box an ideal solution. Sturdy steel box with handle contains three Fair Way Flares equipped with Genuine Bolser locking device to prevent leaking. Trays for flags and fuses available as accessories.



The open flame of a Bolser Flare attracts attention — protects drivers and equipment from traffic. The safest type of warning equipment is an oil-burning BOLSER FLARE.

Hi-Way Warning FLAGS . . . Ful-Vue Truck MIRRORS . . . Truck REFLECTORS . . . Truck Marker and Clearance LIGHTS . . . Truck FLARES . . . DIRECTION SIGNALS . . . FUSEES

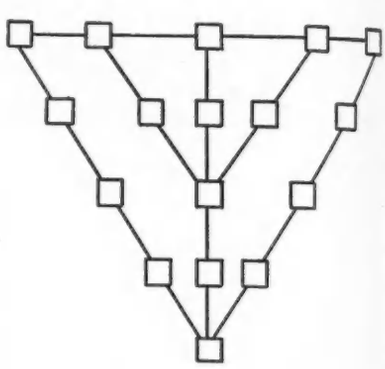
THE BOLSER CORP. Cedar Falls, Ia.

Solutions for Time Out for Play

(See page 72)

Check and Double Check

The attendant parked the 17 trucks like this:



Parts Pay Off

C - ABLE	P - LATE
W - HEEL	F - ENDER
T - READ	T - IRE
B - RAKE	D - RUM

Verbal RPM

1. RePriMand	4. escaRPMent
2. tRiPhaMmer	5. RePayMent
3. RePlaceMent	6. pRotoPlasM

A Matter of Timing

Beeville is 87½ miles from Orville. Here's the way it works out. Because Jim goes to meet him, Tom saves 30 minutes on the usual round trip, 15 minutes one way, and 15 minutes the other. He therefore meets Jim on the road 15 minutes before he usually reaches Beeville. This means that Jim travels only 25 of the 40 minutes he has to spare when he starts out to meet Tom, and if he always averages 30 miles an hour, he must cover 12½ miles before they meet.

Now these 12½ miles also represent the 15 minutes saved one way by Tom. Hence, Tom's average rate of speed must be 50 miles an hour. His usual round trip takes 4 hours. Less ½ hour for moving merchandise from truck to truck, this leaves 3½ hours actual traveling time. At 50 miles an hour this is a round trip distance of 175 miles. The distance between Orville and Beeville must therefore be half of 175 or 87½ miles.

Shop Equipment Maintenance

(CONTINUED FROM PAGE 48)

sistance which throws extra load onto the charger and causes excessive heating of the clip and connecting wires.

3. A charger should be well ventilated. It should be so mounted that air can readily enter at the bottom and sides.

4. The electrical contacts in a charger should be checked periodically. They should be sanded and kept clean.

The recommendation in caring for fast chargers is slightly different, but the same tips would apply, with the following rules added:

5. A fast charger delivers high current. Because of this it is extremely important to make sure that all parts are in good working order. The charger's operation should be checked periodically to detect any irregularity.

6. Any part of a fast charger which is worn out or defective should be replaced at once. Failure to do so throws extra load onto other parts of the charger causing further damage. A stitch in time saves nine applies particularly to fast charger operation.

7. Any fast charger, unless it is rated as a weather proof type should be kept out of the rain or snow and away from splash or bad moisture conditions.

Paint Spraying Equipment

SPRAY guns are precision instruments, designed for long service, but requiring a certain amount of care and service. Proper care requires cleaning the gun and accessories immediately after use, lubrication of bearing surfaces and packing at recommended intervals.

Guns should not be immersed in thinner as this destroys the lubricants in the packings. If necessary to immerse the nozzle, the thinner should be kept below the packing. Passages should not be cleaned with a wire, knife, or hard implement. The air valve stem should be lubricated with a few drops of light oil either daily or as often as use dictates. All packings such as fluid needle packing should be kept soft and pliable by occasional oiling. Packing boxes should be tightened with the fingers only. When in use, the air vent in the cup lid should be kept open and free of accumulation.

Spray guns should be cleaned by removing all material from the cup, and pouring in clean solvent suitable for the material used. The gun should be operated until spray shows clean material. Parts should then be wiped clean and dry with a clean cloth.

If spitting of the gun is experienced, it may be due to dried out packing around material needle valve which permits air to get into the fluid passageway. When this is true, back up the knurled nut, place two drops of machine oil in packing and replace nut. This may eventually require replacement of the packing.

Spitting may be caused by dirt between the fluid nozzle seat and body or a loosely installed fluid nozzle. This can be overcome by

(TURN TO NEXT PAGE, PLEASE)

Stops Waste of Gasoline!

If your driver stops on his route to make delivery and *leaves the motor running meanwhile*—that means just so much WASTE of gas. And with the present shortage, this is no time to waste gas!

But how can you *know* about this waste? Install the "Motor Idling" Model of the SERVIS RECORDER. It has *two* Styluses—the regular Stylus to record when the truck itself is moving, and an additional Stylus to record (on the same chart) when the truck is standing still *but with the engine running*. See chart above.

Right now is the time to watch your gas and oil bills. And the first step in doing that is to write us for our folder on our *D-S Motor Idling Model*. Write today. The Service Recorder Co., 1375 Euclid Avenue, Cleveland 15, Ohio.

The Servis Recorder
Helps to Save Gas and Oil

Shop Equipment Maintenance

(CONTINUED FROM PAGE 143)

removing the fluid nozzle nut, cleaning back of nozzle and seat with a rag wet with thinner and replacing the nozzle. And finally, a defective swivel nut on the syphon cup or material hose can cause spitting.

If the gun is used with a pressure tank or gravity bucket, the gun should be turned upside down and thinner poured into the fluid opening, moving trigger constantly to flush out passageways and to clean tip of needle.

Steam Cleaners

MOST shops have found that the best assurance of obtaining reliable service from the steam cleaning unit is to place a competent mechanic in charge of the machine and make him responsible for its maintenance. This mechanic should study the operating and service manual supplied with the unit and familiarize himself thoroughly with all its components. As with all equipment there is a certain amount of lubrication and adjustment to be made at regular intervals. Coils should be desooted and the water tank flushed out. Fuel and water strainers must be cleaned and safety controls checked.

One of the most important points in the operation of a steam cleaning machine is to avoid scaling of the coils. A material should be selected that has a minimum tendency of building up deposits in the coils. To cut down coil scaling shut off the fire first and wait until water flows from the nozzle of the steam gun, then shut off the motor. This allows the coils to cool down so that alkalies and hard water constituents in the cleaning solution do not precipitate onto the interior wall of the heating coil. Very often just the opposite is done with the result that solution in the coil is completely dehydrated, leaving the alkali in the coils. By following the simple precaution of shutting off the fire first, scale build-up is greatly minimized.

No matter what cleaning material is used, no matter how carefully the machine is shut off, scale will gradually build up in the coils especially in hard water areas. The water pressure gage will indicate the degree of scale deposits and when they become excessive, the coil should be descaled. Many manufacturers of steam cleaning units recommend a special compound for this work.

The Lathe

THE time required to keep the lathe clean is more than offset by the added life, increased production and greater ease of operation. Dirt accumulating on bed ways, dovetails and other bearing surfaces will shorten life appreciably. Unless brushed away frequently the scale, grit and fine chips will mix with the oil to form an abrasive. If chips are permitted to work under the tailstock or saddle or into the spindle taper, the accuracy of the machine may be impaired.

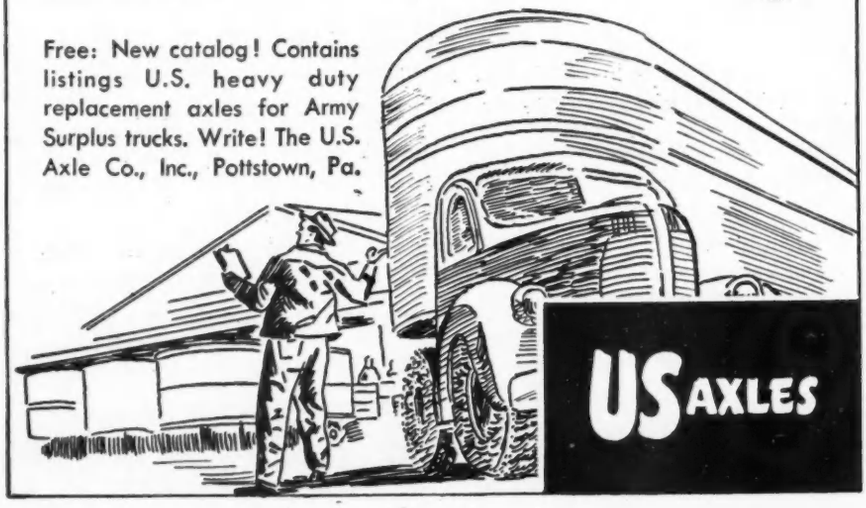
A small paint brush is recommended for brushing loose particles from the carriage and bed. Compressed air is not recommended be-

(TURN TO PAGE 146, PLEASE)

Tough U.S. AXLES

Keep the fleet moving ... day and night... with fewer breakdowns, lower maintenance costs. We save time & dollars with U.S. Axles always. Try 'em! At your Jobber.

Free: New catalog! Contains listings U.S. heavy duty replacement axles for Army Surplus trucks. Write! The U.S. Axle Co., Inc., Pottstown, Pa.



US AXLES

GMC SERIES 720 AND 800

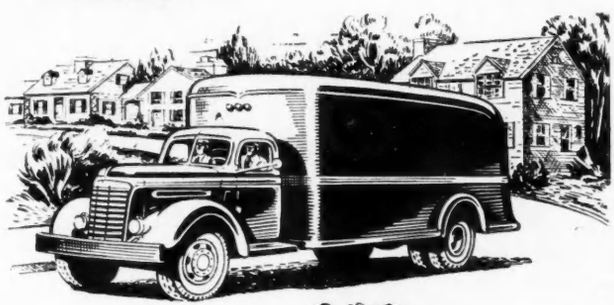
Winning Numbers FOR HEAVY HAULERS

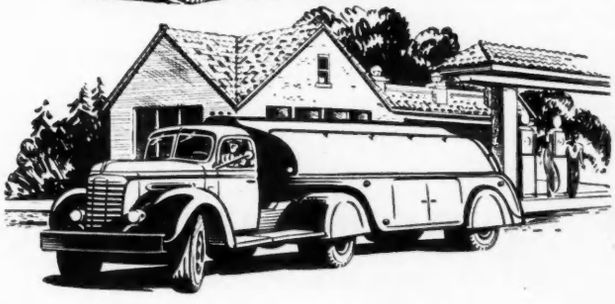
Here's good news for operators hauling heavy loads of milk, petroleum, machinery . . . logs and lumber . . . stone and ore . . . furniture and freight. Substantial production of GMC 720 series Specialized Tractors and 800 series straight truck models, assures quick delivery.

GMC 720 series tractors have gross combination weight ratings of 40,000 pounds . . . the 800 series trucks have gross vehicle weight ratings of 30,000 pounds. Both are offered in wheelbases of 136 to 196 inches, with cab-axle dimensions of 60 to 120 inches. Both have big 426 cu. in. engines of the same basic design as the war famous "Army Workhorse." Both have many other features specific to the jobs for which they are built.

If you need a new truck in either classification, put your money on one of these all-truck, heavy duty GMCs.

GMC TRUCK & COACH DIVISION • GENERAL MOTORS CORPORATION





THE TRUCK OF VALUE

GMC TRUCKS

GASOLINE • DIESEL

Shop Equipment Maintenance

(CONTINUED FROM PAGE 144)

cause it may blow dirt and chips into oil holes and between bearing surfaces. In addition, it may blow material into the eyes of the operator. A clean cloth should be used to remove last traces of dust and grit. A little oil on the cloth will prevent rust from forming on the finished surfaces. This operation should not be performed while the lathe is running.

Once a week or depending upon the use of the machine, the lathe should be thoroughly cleaned with kerosene to remove oil and gum stains. A caustic cleaner will damage the painted surfaces or cause rust. Naphtha or other explosives should not be used. Carbon tetrachloride is recommended for this job.

All oil holes should be plugged to prevent foreign material from falling into them. Periodically the apron oil reservoir should be drained and cleaned by flushing with kerosene. The headstock oil reservoir should be drained and flushed and fresh oil added. A stiff scrub brush with kerosene is a good way to clean the screw threads, gear teeth, etc.

Grinding wheels and similar equipment should not be located near lathes, due to the possibility of emery dust settling on the lathe. When the lathe is not in use, it should be covered with a canvas. The V belts and pulley should be kept free of dirt and oil. Saddle soap or carbon tetrachloride can be used to clean the belts. When leather cone pulleys become stiff, they can be softened with neats-foot oil. Sticky or gummy belt dressings are not necessary and should not be used.

Each lathe will require special treatment with regard to lubrication, and it is the responsibility of the fleetman to see that manufacturers' recommendations are adhered to. It is necessary that the correct grade of oil be used for spindle bearings, motor bearings, apron oil reservoir, etc. General lubrication requires a good quality medium body machine oil. Engine oil is not suitable.

Oiling should be periodic, varying in time increments with the use of the machine. It should never be lubricated while running. It is important that the lathe be wiped off with a clean cloth after the oiling so that foreign material will not collect.

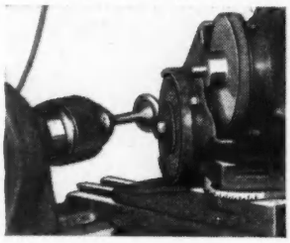
Drive belt tension should be inspected frequently. Belts adjusted too loosely will slip and if too tight will cause loss of power through friction as well as premature wear of bearings. Adjustments will vary with size and type of lathe, but in general, they should be just tight

(TURN TO PAGE 148, PLEASE)

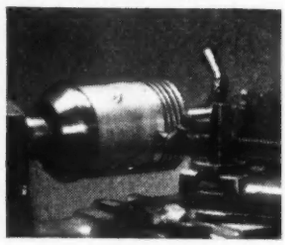
SOUTH BEND

FASTER, BETTER SERVICE WORK

Machining a commutator with a South Bend 10" Toolroom Lathe. Photo by Pan American World Airways.



Valve Re-facing



Piston Turning

South Bend 10" lathes have improved service work for hundreds of shops. Their accuracy and dependability make them exceedingly useful for a wide range of service jobs. Duplication of factory tolerances on new work can be readily accomplished. This accuracy, plus their versatility, will improve the over-all quality of your work and increase the scope of your service.

South Bend 10" Lathe prices start at $755, f.o.b. factory. For full information, see your jobber or write for literature.

• • •

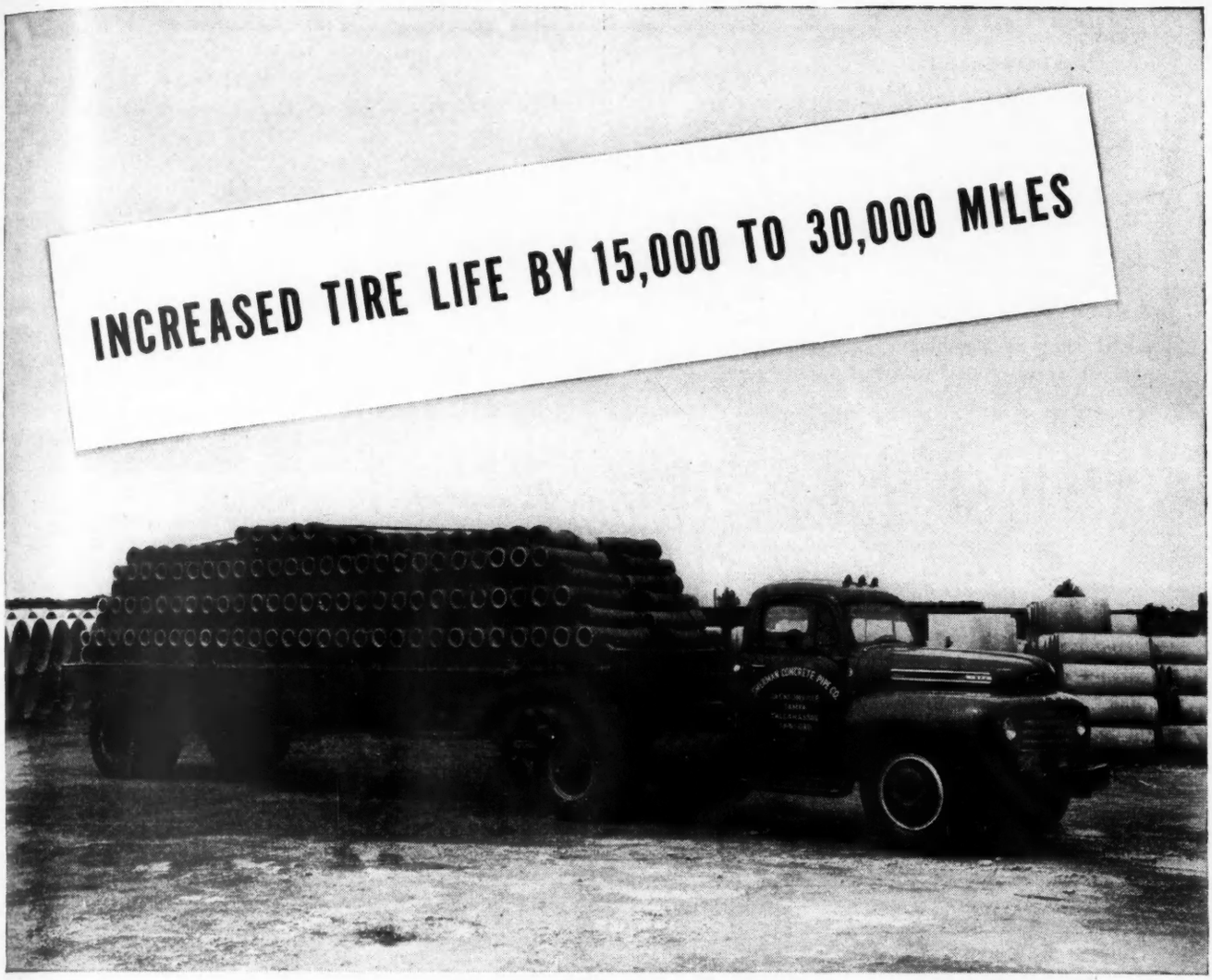
NEW 14" DRILL PRESS—a rugged, precision-built tool ideal for automotive shops.

SOUTH BEND LATHE WORKS

Building Better Tools Since 1906

445 EAST MADISON STREET, SOUTH BEND 22, INDIANA

INCREASED TIRE LIFE BY 15,000 TO 30,000 MILES



The going is plenty rugged down among the Florida pine stumps and palmettos where the 74 trucks and trailers of the Sherman Concrete Pipe Company of Jacksonville operate.

As a consequence, this company is a steady customer for Jeff Giuffrida, salesman for Southeast Wheel & Rim Company, Budd Wheel distributor in Jacksonville.

W. A. Birt, salesmanager for Southeast writes: "Mr. Carter, the manager, started using wide Budd Wheels back in 1941 when the wide base program first got under way. Every time he purchases a new truck or tractor we are called in to furnish the correct Budd Wheel equipment. He reports that tire failures prior to changing to Budd heavy-duty wide wheels occurred after from thirty to forty-five thousand miles. Since the change-overs many of their tires have run in excess of 60,000 miles and are still going strong. Road failures have been practically eliminated. Many of their tires are being recapped with exceptional results. He estimates they have reduced wheel breakage and tire cost per mile by 30%".

Here's a typical example of how Budd distributors help their customers. Ask the Budd distributor near you to inspect your equipment and your operations. Won't cost anything, and he may be able to show you how to save important money. Budd Wheel distributors are located in 57 principal U. S. cities.

The Budd Company, Detroit 14.

Look for this label (in blue, red and gold) on the rim of every genuine Budd Wheel

Shop Equipment Maintenance

(CONTINUED FROM PAGE 146)

enough so that they won't slip. This will permit a deflection between pulleys of about 1 in. When adjusted correctly they should feel "alive" when tapped with the finger tips.

Lubrication Equipment

THERE may be a tendency on the part of service men to overlook the fact that lubrication equipment needs periodic attention if the best operation is to be obtained. The control valve for high pressure lubrication must be kept in proper adjustment for measured shot delivery. Every lube man should know how to do this.

The control valve should be hung on a suitable hook when not in use. Dropping it, laying it on a litered floor, or leaving it to be run over by a vehicle will shorten the life appreciably. The hose should be kept clean, but gasoline should not be used for cleaning. Use of an oily rag is best.

If the lubricant pumps are sluggish, it may be due to low air pressure. A minimum of 100 lb pressure is required for satisfactory operation. Pneumatic lubricant pumps must be oiled daily when the equipment is in use. Neglect of this service causes more air valve and air motor failures than any other single factor, according to manufacturers.

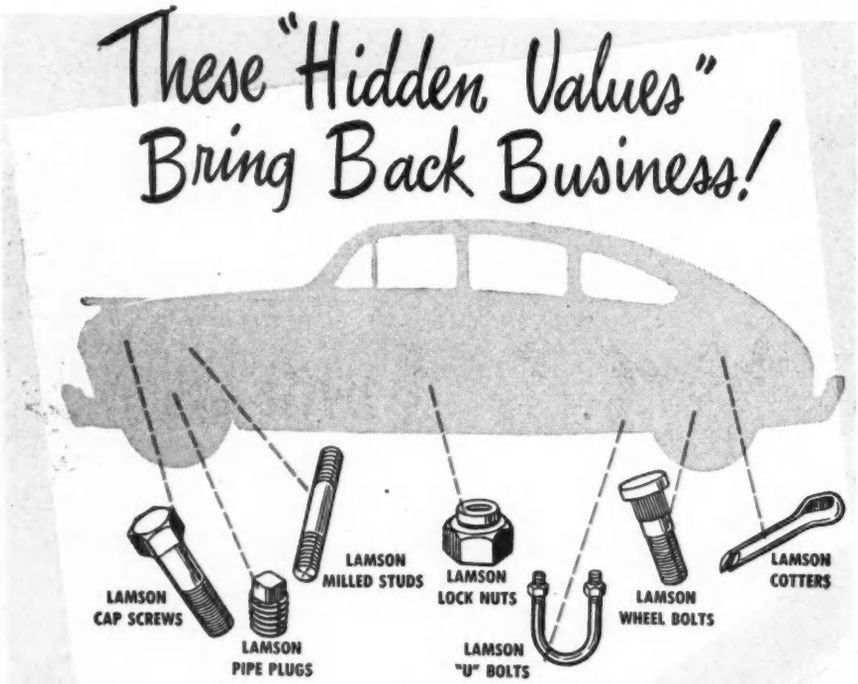
If lubricant pumps are "lazy," the air couplings should be checked at the compressor and at the pump. If the tire chuck sealing washer has deteriorated, it will not allow sufficient volume of air to enter air pump motor. Where pipe is used for an air line, it must be kept free of rust and scale.

If the pump operates continuously without building pressure or delivering lubricant, it may be due to a dirty check valve. This condition will also occur when the lubricant container is empty, or when the lubricant is channeled. The lubricant must surround the foot valve of the pump for proper operation.

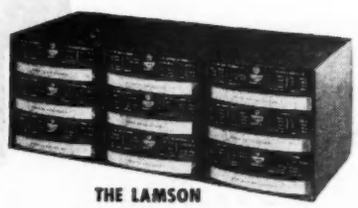
It is extremely necessary that only clean lubricant be used. Foreign matter will cause check valve trouble and may damage close fitted parts of pump mechanism—to say nothing of the accelerated wear of vehicle parts. Air pockets arising when the reservoir is filled will cause the gun to run continuously without pumping lubricant.

It is suggested that specialized guns and accessories be kept on their

(TURN TO PAGE 152, PLEASE)



● Quality under the polished paint—that's what makes a car really *good.*



THE LAMSON "TREASURE CHEST"

And no part of a car is more important than the fasteners used on it—particularly on repair jobs.

Lamson fasteners are "original equipment" on most cars, so it's smart to choose and use them for repair work. They'll do their part to match the quality of your workmanship, keep customers satisfied and *bring back business.*

THE LAMSON & SESSIONS COMPANY

General Offices: 1971 West 85th Street, Cleveland 2, Ohio

Plants at Cleveland and Kent, Ohio • Chicago • Birmingham

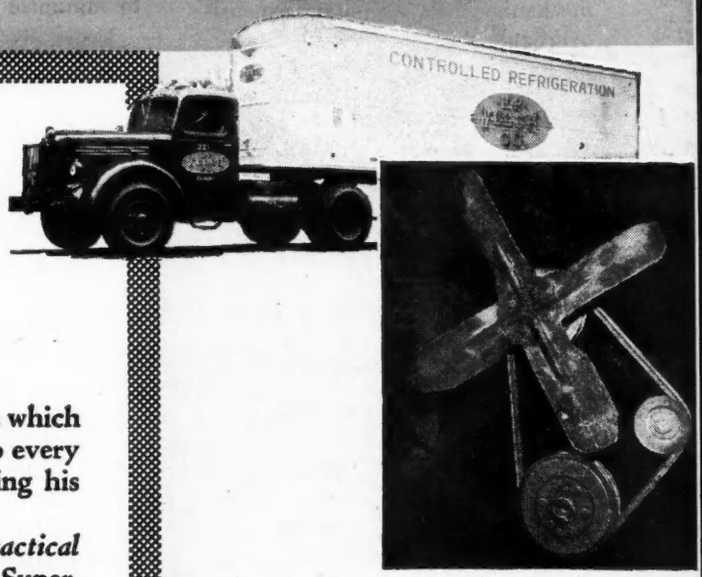
Automotive Fasteners

LAMSON & SESSIONS

Ask your distributor for the Lamson Line

"Murphy's wife sure takes an interest in his work!"

. is the ONE Belt that is *Specially Engineered* for TRUCKS *and* BUSES



Records Show 50% to 80% Longer Life Than *Any Other Belt!*

The *written* statements of well-known Fleet Operators which appear on these two pages tell a story of real importance to every operator who cares about reducing his costs and increasing his profits.

Please note that these statements are all made by *practical* men—General Managers of Fleets—Purchasing Agents—Superintendents of Maintenance — men who know from *experience* just how important a good truck belt is in keeping trucks on schedule, in avoiding costly delays, in reducing operating costs —in getting the job done *on time* and *at a profit!*

These men know, as you do, that a truck belt is actually a most important part of the motor. No truck can run without a belt. And, while the belt's initial cost is small, it can cost a lot of dollars if at some critical moment it fails and holds the truck idle while a road-service call is made.

Saving Road Delays Pays Really Big Dividends

Please note also, that these operators tell not only of *cutting their belt costs actually in half*—or more—due to the much longer life of the Gates Truck Belt. They emphasize particularly the *even greater* savings this belt gives them by cutting down road delays and thus increasing priceless *operating time* — the only thing that pays them (or you) a profit.

We believe you will want to read every one of these statements. Surely they will convince you that you, too, can profit by using the one belt that is specially engineered for trucks and buses—the Gates Truck Belt.

Why Expect TRUCK BELT SERVICE from a Passenger Car Belt?

You wouldn't use a Passenger Car TIRE on a Truck. Why use a Passenger Car BELT?

The moment you think of it, you know that a typical truck belt must carry more than 3 times the horsepower load of a passenger car belt. Moreover, all the other strains and stresses—the hours of continuous operation—the speed of acceleration and deceleration—the starts, the stops—the idling in low gear—*all* are far greater in the case of Truck Belts. Isn't it only the part of wisdom, then, to use the belt that is *specially engineered* for this more demanding service—the GATES TRUCK BELT!

Gates
REG U S PAT OFF

The Mark of Specialized Research

THE GATES RUBBER COMPANY
DENVER, U. S. A.
"World's Largest Maker of V-Belts"

Gates Belt Jobbers in Every City Can Supply You Promptly

Shop Equipment Maintenance

(CONTINUED FROM PAGE 148)

proper hooks and labeled so that proper lubricants are used for each application. When major repairs are required, the fleetman should secure the service of factory representatives, as improper tools or unqualified mechanics may necssitate expensive overhaul later.

Brake Drum Lathe

LITTLE maintenance is required on the brake drum lathe beyond oiling the motor every three to six months, and putting a few drops of oil on the grinder spindle, where it is clamped in position. The spindle bearings on most lathes are of the oilless type and should not be lubricated. The spindle should be kept clean, especially at the rack teeth, to minimize wear.

Every six months the main bearing caps and gear cover should be removed, the main spindle removed and the gear case flushed and cleaned. Manufacturers' recommendations should be checked for proper oil type. Oil retainers on the front of the main spindle should be cleaned and regreased at this time.

The gibs in crossfeed slides should be kept clean and properly tightened. Chips should be brushed off with a painter's brush so they will not work into surfaces and cause early wear. Take-up on the gibs should be uniform as binding at the gib will cause inaccurate work at the tool point. Main bearings should be kept reasonably tight, to eliminate play in the main spindle. Most of these units are adjusted by removing thin layers from the laminated shims located between the upper and lower halves of the bearing.

On some machines lubrication has been taken care of with the use of oilless bushings. Reservoirs, however, must be kept filled to recommended levels and main spindle bearings usually require a daily lubrication with light grade of oil. If the motor is the type with an oil reservoir, it should be kept filled with a good grade of machine oil.

Capacitor motors used on the grinding attachment usually require some attention. If the motor hums when turned on with no load, but fails to start without a sharp twist with the hand, it is possibly due to a defective capacitor. This can be replaced with little time or expense.

END

(Please resume your reading on P. 49)

MIRACLE POWER

*"CYLINDER WEAR REDUCED AT LEAST 30%"
"STICKY VALVES ALMOST ENTIRELY ELIMINATED"
"A SAVING OF 13½% ON OIL COST"
"VALVE GRINDS REDUCED APPROXIMATELY 30%"

PUTS THE "PURR-R-R-R"— IN ENGINE PERFORMANCE

So say the operators (name on request) of a fleet of 70 power units when telling of results obtained from Miracle Power. Speaking further—"The most noticeable feature is that experienced when running in rebuilt motors, which run more freely in ten minutes than they ran with two hours operation using oil without this additive." Write for complete facts regarding this outstanding advancement in engine lubrication.

SOLD EXCLUSIVELY BY
THE AP PARTS CORPORATION • TOLEDO 1, OHIO
MANUFACTURERS OF THE FAMOUS AP "MILEAGE GETTING" MUFFLERS AND PIPES

"Anywhere but there, driver!"

NOW ADOPTED BY MANY OF THE NATION'S LARGEST FLEET OWNERS ON PERFORMANCE-PROVED RECORDS

REDUCES POWER LOSS: The Mallory Distributor-Governor, because of its unique and exclusive design, provides instantaneous throttle action—will not choke engine when pulling heavy loads on hills—governor throttle always remains wide open until engine reaches its maximum governed speed.

IMPROVED SPEED REGULATION: The Mallory Governor is controlled by a centrifugal air valve on the distributor shaft—is not like the average governor—being operated by a vacuum powered diaphragm. This insures instantaneous response—eliminates motor surge—cannot be tampered with—is fool-proof and above all is as positive and dependable as the operation of the Mallory Distributor itself.

QUICK INSTALLATION: Due to its revolutionary design the Mallory Distributor-Governor can be installed on most popular truck designs without need for special drive, linkage or adapter accessories. Only one piece of metal tubing is used in connecting distributor and governor.

MORE ENERGY WITH THE MASTER COIL: A hotter spark, easier starting, greater dependability, superior performance are now assured with the Mallory Master Coil because of its special water-proof design. (Coils can be completely submerged in water with engine continuing to run without interruption or power loss.) Available for either 6 volt or 12 volt systems—$10.00 for 6 volt . . . $12.50 for 12 volt and $2.00 for Condensers.

WATER-PROOF AND AGE-PROOF: The novel water-proof features of Mallory Master Coils are due to the coils and windings being seated in a special transformer oil to eliminate short circuits or breakdowns while the wire leading to the distributor is specially sealed in to make the entire assembly completely water resistant and age proof.

DISTRIBUTION OF MALLORY PRODUCTS for Sales and Service May Be Open in Your Territory. Write us for full details.

NATIONALLY KNOWN TRUCK FLEETS USING MALLORY EQUIPMENT

Railway Express (National)
Kraft Foods (National)
Valley Bus Lines (Rochester, N. Y.)
Deluxe Motor Stages (Mid West)
Cudahy Packing (National)
City of Cleveland (Local)
Refiners Transport and Terminal (Mid West))
Ward Baking (National)
Clemens Truck Lines (Mid West)
Posnik & Co. (Mid West)

Mallory Distributor Governors
Are Standard on
American Aero Coach
Autocar **Federal Trucks**

Optional on
International Trucks

MALLORY ELECTRIC CORPORATION
Manufacturers of Automotive Electrical Devices
DETROIT 4, MICHIGAN

Inspectors from Missouri

(CONTINUED FROM PAGE 65)

road. The inspector turned down to the job and parked.

This is Division 5 not 7, I reminded him.

"Quite so," he remarked, no doubt surprised at my remarkable erudition. "But we don't deadhead, we work our way to our destination."

He was greeted by various members of the crew which was engaged in operating equipment for blacktopping a farm-to-market road. While he was looking over the equipment he spotted a half-ton pickup truck.

"One of our traveling mechanics," he said, and was soon engaged in conversation with a man who had been tuning up a truck engine, a 1½-ton International. He questioned him about what he was doing and the condition of the rest of the equipment, considered it was being well handled and we headed for Joplin again.

Two questions, I asked him. One, "Who is superior in authority, the inspector or the traveling mechanic?" and two, "How does the traveling mechanic operate and to whom is he responsible?"

Inspector Has Authority

"THE inspector," he said, "represents the Bureau of Equipment in the field. His authority is second to none except R. P. Cummins, superintendent, or Tom Johnson, assistant superintendent. We have authority over the foremen of the division garages and the authority to do whatever is necessary to get our recommendations carried out. One of the first things we do when we get to a division garage is to check the inspection sheets which were sent them previously to see if all the work has been carried out and if not, exactly why not."

"Actually," he continued, "we have little trouble about authority and supervision because our men are picked to be efficient and cooperative. Our foremen must get the work done but they must also realize that while the work on the truck is important, that the work being carried on by the highway engineer of the division is the reason for the truck being there and that highway maintenance, like the show, must go on. Consequently the foreman must be a man who can direct, or do the work and who can cooperate with the highway engineer and the inspector simultaneously."

I learned that the inspector gets his actual expenses when he is away from headquarters.

The traveling mechanics, I reminded.

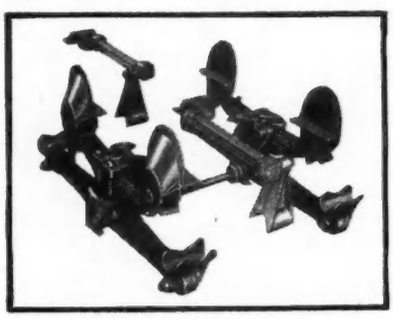
"There are three traveling mechanics who work out of the main garage in each highway division," he said. "These mechanics travel in half-ton pickup trucks and carry a complete set of tools, often including both gas and electric welding equipment. They get actual expenses when away from their own headquarters and their assignments come from the garage foreman. The garage foreman, depending upon the division, may have three to 10 mechanics in his garage in addition to the three traveling mechanics."

Simple and efficient, I agreed, suggesting that when the traveling me-

(TURN TO PAGE 156, PLEASE)

SAME CARGO
SAME HAUL
SAME ROAD
SAME DRIVER

BUT THERE'S A DIFFERENCE IN TANDEMS



DRIVERS PREFER a Hendrickson-equipped rig for a smooth, level ride. They know that the experience and leadership of Hendrickson engineers in tandem design are second to none.

HENDRICKSON MOTOR TRUCK COMPANY
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Follow the Leader!

At Last!

YEAR 'ROUND RADIATOR PROTECTION FOR TRUCKS

with a SPEAKER "ALL-WEATHER" RADIATOR FRONT

U. S. Pat. No. 2,237,986

Here's a "natural" for truck owners everywhere — the heretofore "missing link" accessory for which there has been an urgent need. It's the dual-purpose Speaker All-Weather Radiator Front, designed to give "Year 'Round" protection to all kinds of trucks from the smallest panel to the largest semi. Yes, it's a combination "Winter Front" and "Summer Bug Screen"—made to protect truck radiators and motors from frigid blasts in cold weather . . . insects in warm weather. Made for permanent under-hood installation and *dash-controlled from the driver's seat.*

In winter it not only helps the motor attain optimum operating temperature *faster* but enables it to maintain this temperature. Protection of this type results in smooth, sludge-free operation, increased gasoline mileage, fewer breakdowns, lower repair costs, greater safety through faster defroster action, and a warmer cab through stepped-up heater performance.

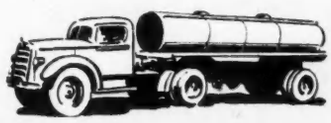
In summer it protects radiator from bugs and insects. Yes, it *screens 'em out and brushes 'em off* before they have a chance to clog radiator cores and interfere with the proper functioning of the cooling system as a whole.

The Speaker All-Weather Radiator Front is made of first quality, non-rusting, corrosion-proof aluminum to last the life of a truck. Winter shield, of durable Pyroxylin, is tightly wound on spring roller and quickly raised over the desired radiator surface by pulling dash or glove compartment control knob (mounting optional).

Stiff-bristle brush attached to top of roller whisks bugs and dirt from screen surface. Snug fitting wiper attached to bottom of roller housing cleans mud and dirt from winter shield. Made in sizes to fit 95% of all late model trucks and cars. Simple and speedy to install. No special tools required. Completely concealed behind radiator grille.

There's absolutely NOTHING ELSE LIKE IT. Truck Fleet price: $13.00. Contact your automotive jobber or write us direct if he can't supply you. Speak up for a SPEAKER "ALL WEATHER" RADIATOR FRONT today. You need it the year 'round. Necessary in all climates in all seasons.

The open-grille modern truck must have SPEAKER protection — one freeze-up or insect laden trip can cost you more than a Speaker "All-Weather" Radiator Front. Place your order today.



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Inspectors from Missouri

(CONTINUED FROM PAGE 154)

chanics weren't traveling they were garage mechanics.

Traveling Mechanics Travel

"WRONG," the inspector said. "The traveling mechanics are always traveling mechanics. The reason for their existence is the fact that it is often impractical and too much loss of time to bring big slow-moving equipment back to the garage for repairs. Big motor graders, big track-type tractors and such equipment can be more quickly repaired in the field and this is the job of the traveling mechanic. Incidentally he knows no hours. He may work 30 hours at a stretch on a job with but a sandwich and a short nap. He had usually rather work on the job and get the equipment back into service than sit around a country hotel. Besides that: *THERE IS NO OVERTIME IN THE HIGHWAY DEPARTMENT.* A man who has to work many hours overtime will find that he can get off during a slack time for a short vacation, or go fishing or to a baseball game, if authorized, of course.

"The boys take a whipping in the winter time to keep the equipment operating, the snow plows going," the inspector said. "Many of our garage foremen put a cot in the garage and stay in the shop for emergency work during heavy snows."

. . . Picked for Ingenuity

"I'LL tell you a good story," the inspector continued. "These traveling mechanics are picked for their ability, their knowledge and their native ingenuity. They have to do a good job under a shade tree with the equipment they carry in the truck.

"Some 15 or 20 years ago when Mr. Cummins was getting the Equipment Bureau well organized, he had a habit (still has for that matter) of going out into the field to see how the equipment was being serviced. Hundreds of men in the department didn't know him from Adam's off-ox. He was batting down a little country road on such a trip when he ran bang up to a big track-type tractor being dismantled on the side of the road under a shade tree. Mr. Cummins thought this was going to be a prize example of inefficiency. He stopped and watched the man a while and then asked him if he was employed by the state road department. The man answered that he was and that he was a traveling mechanic working out of a certain divisional garage.

Mr. Cummins found out that he had been working on the machine since 5 o'clock that morning and that he had only been away from the job 30 minutes for coffee and a sandwich. Mr. Cummins stayed with him until he began reassembling the engine. He said that every piece was cleaned, the work was done on a precision basis just as if he was on the concrete floor of the main garage. When he left he shook his head and said it was uncanny what these fellows can do under a green tree."

We finally passed through Springfield after a number of short stops where the inspector checked state

(TURN TO PAGE 158, PLEASE)

The Best Combination
for FINE ENGINE PERFORMANCE

Johnson ADJUSTABLE TAPPETS
and the
Johnson SELF-LOCKING TAPPET SCREW

The Johnson Self-Locking Tappet Screw is made from the finest Steel, accurately heat treated to give it toughness and long life. The flexible spring action of the diaphragm holds the threads fully and rigidly seated at all times. The entire load is carried by the solid portion of the screw.

The Johnson Self-Locking Tappet Screw has no leading edges and is not self-tapping. Effectiveness is maintained through any number of adjustments.

Write today for the latest Johnson TAPPET BULLETIN.

Johnson PRODUCTS INC.
MUSKEGON, MICHIGAN
"Tappets Are Our Business"

For POSITIVE Braking Control . . .

we use WORLD BESTOS Brake Blocks

"Greater Lining Life . . . . Lower Costs"

• Glennon's Milk Service, Inc., of West Chester, Pennsylvania, operates 27 tractor-drawn thermos tank units over hilly and often mountainous routes through most of the Middle and South Atlantic States. During the past two years, this operator has installed WORLD BESTOS Brake Blocks on over two thirds of these heavy-duty units.

"We like World Bestos Blocks for the positive braking control they give us," says "Del" Glennon, shop foreman of Glennon's Milk Service. "And we also appreciate the greater life we get out of these linings. That means lower costs, for we really roll up the mileage in this milk-moving service."

WORLD BESTOS Brake Blocks give top performance in even the most severe service because they provide stable, resilient friction under all operating heats and pressures. Wear is extremely slow, and braking control remains even and positive throughout the life of the blocks. You can prove this performance by relining with a set of WORLD BESTOS Brake Blocks and comparing them to those you now use.

BRAKE LININGS WB BRAKE BLOCKS

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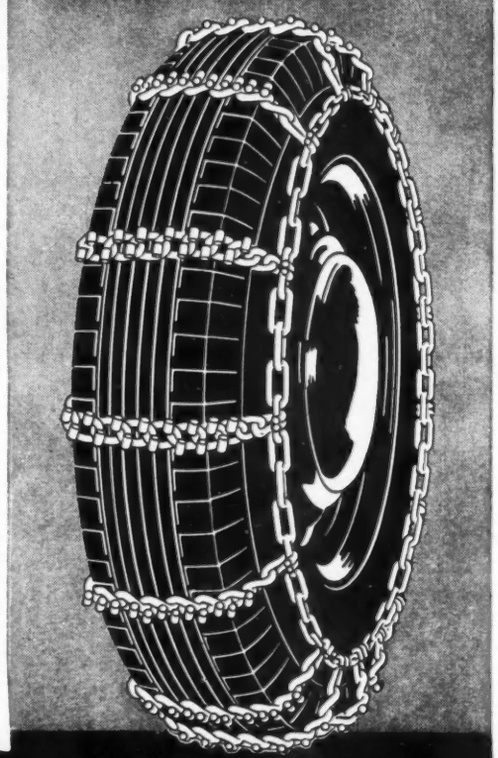
NEW CASTLE • INDIANA

HOOT MON!

More Economical in the Long Run!

McKAY Multi-Grip TIRE CHAINS



McKAY MULTI-GRIP LINKS

Double traction bars on every gripping link increase efficiency, give more traction area, make chains last longer.

Easy to Put On... Hard to Wear Out!

• EXTRA MILEAGE
• ADDED TRACTION
• EASIER APPLICATION

Proved best on the streets and highways of America! Built for rugged performance. For safer driving on ice and snow, always be sure your vehicle is equipped with McKay *Multi-Grip* Tire Chains.

DISTRIBUTED BY BETTER JOBBERS EVERYWHERE

THE McKAY COMPANY PITTSBURGH 22, PA.

WELDING ELECTRODES . . . COMMERCIAL CHAINS . . . TIRE CHAINS

465 McKAY BUILDING • PITTSBURGH 22, PA.

Inspectors from Missouri

(CONTINUED FROM PAGE 156)

highway trucks and made out a written report.

I asked the inspector if we had to work our way all the way to Joplin and how long it would take.

"I do," he said, "I understand you're just going for the ride. We stop at each shed after we get into Division 7 and it'll probably take us a day and a half or two days to get to the Division 7 Garage in Joplin.

Just outside of Springfield we found considerable equipment. Crews were working down the road sides and clearing out the ditches. At other spots weeds were being mowed. Another place there was patching of paving.

The inspector decided to make Springfield an all-night stop. He went over to the main garage and talked over things with the foreman. He made some notes. The foreman asked him to look at a truck in the yard. It was pretty old and had seen a lot of service.

The inspector remembered the truck and recalled an overhaul it had had, a new block once upon a time.

"Yes sir, old SHD 99 has seen a lot of service. I'm going to put her down to junk," he told the foreman, "but my report is not final. An action to junk or to trade in has to be discussed at headquarters with Mr. Cummins and Mr. Johnson. They have the overall picture and they know what we can buy to replace it. But my guess is that old SHD 99 has made her last run."

We finally got to Joplin and the inspector had a sheaf of reports made out on the Division 7 equipment he had seen on the way in. The first thing he did was to hunt up the garage foreman and discuss any left over work from a previous inspection. There was none. He then located the division engineer and discussed the condition and use of the equipment with him.

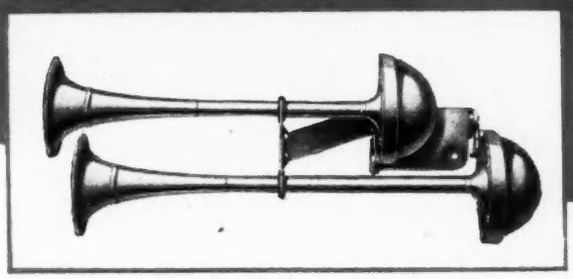
Repair Order Priority

BEFORE I left him to hunt out every piece of state equipment in Division 7, I asked him what order would be used in sending out the re-

(TURN TO PAGE 162, PLEASE)

Sparton Tornado

Sparton does it again with a great new twin-trumpet electric air horn that's many ways better



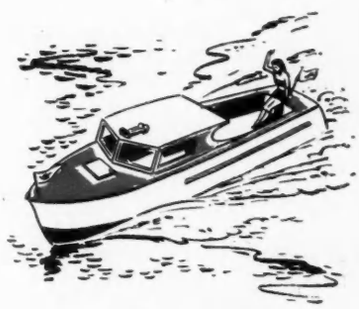
WARNING POWER OF A TORNADO EASILY INSTALLED . . . LOW COST TAPS 3 GREAT MARKETS FOR YOU!

FOR AUTOS

The graceful lines and chromium finish of the Sparton Tornado give the finest car an added touch of elegance when it is mounted on the fender . . . and that's where the warning signal is most effective. Every motorist who demands the best and appreciates the advantages of safety equipment is a prospect for this outstanding twin trumpet beauty.

FOR TRUCKS

Over-cab mounting is the preferred position for the Sparton Tornado, although the bracket is built for side-mounting positions on the hood or body. It's that great "OOMPH!" that clears the road . . . means safer driving for the big rigs that must keep rolling.



FOR BOATS

This beautiful brass, chromium-plated Tornado shows off like a jewel when mounted on the forward deck or cabin deck. *Its rich, powerful tone carries for miles over water!* And its low retail price and shipshape design sell skipper on sight!

THE SPARKS-WITHINGTON COMPANY

AUTOMOTIVE DIVISION • JACKSON, MICHIGAN

Inspectors from Missouri

(CONTINUED FROM PAGE 158)

pair recommendations he would bring back to the main office on Saturday.

"Normally they will send all the repair orders to the division garage foreman and he will discuss them with the division engineer," he said. "That is the larger jobs. The smaller jobs will go forward as routine but on engine overhauls and jobs that require a lot of time it is necessary to arrange a time to take the unit out of service. For instance we might have ordered an engine overhaul on a motor grader. The division engineer may know that this grader will be idle after another week of work. Consequently they fit the repair work in with the timing of the highway work. Some overhauls are scheduled for the garage during winter months which may idle the machine because of winter weather and provide an ideal time for overhauls in preparation for a busy spring, summer and fall."

Another thing I learned is that all employees except the new ones being tried out for a permanent job, work on a monthly salary and no overtime pay is allowed. Each garage foreman is allowed two weeks vacation each year with pay and he is replaced for the vacation period by one of the general inspectors. This gives the inspector a chance to see how things are going in this district and to work out better routines for the shop.

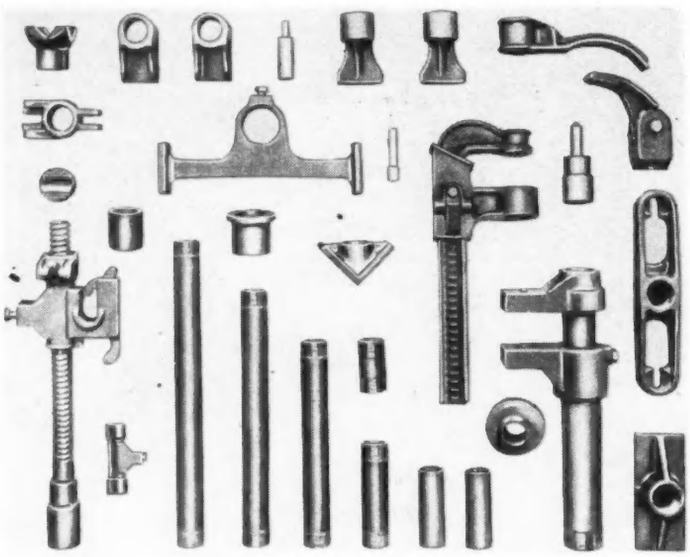
As representatives of the headquarters office and with full authority in the field, the inspectors act as expediters as they travel to and from their regular assignments. It is their duty to visit any road job they see and there take any measures that will expedite repairs or to institute any action that will start service and repairs that will avoid any delay or loss of time in road maintenance or construction.

Inspectors Well Received

IN actual practice the road crews, traveling mechanics, garage foremen and division engineers, are glad to see the inspector coming, because if they have troubles it is just the same as visiting Supt. Cummins in his office, and he is definitely a man of action and a believer in accomplishment.

In buying new shop equipment for garages, the garage foreman can ask that he be supplied with some specified item of equipment. This results in a check from a general inspector who considers the need for the equipment and the use to which it can be put before he may certify the need

(TURN TO PAGE 164, PLEASE)



These are the tools that make POWER-PLUS push-pull JACKS so convenient and easy to use

Power-Plus Tools take the "guess" out of time consuming shop operations—there's a special tool quickly applied to every simple and complicated problem.

Power-Plus hydraulic Jacks —20-ton, 10-ton, 4-ton —will do everything—direct PUSH, direct PULL—controlled by a turn of a valve—operate in *any position—cannot become air bound—no bleeding.*

Power-Plus has proven itself the outstanding *body-fender-frame* unit. You pay for it every 30 days whether you own it or not—ask your jobber, or write direct.

PERFECTION POWER-PLUS TOOLS

G. A. C. MANUFACTURING CO. Ashland, Ohio

Fleet operators all over the country continue to specify Edwards Semi-Trailers because they have proved a profitable investment in haulage equipment. And it's no wonder, for Edwards trailers are the result of tried and proved engineering principles . . . the result of years of trailer manufacturing experience . . . the result of never-ending Edwards research.

The corrugated models illustrated are continuously welded to top and bottom side rails. High tensile steel frame and body cross members assure durability for even the most gruelling types of work.

Edwards features include Timken Bearings and Timken Axles—13, 18, 21, or 25 thousand pound rated capacity at wheels; —vacuum or air operated brakes—16½ x 5, 16½ x 6, 16½ x 7, or 18 x 7;—extra heavy duty vertical type drop supports—single or double speeds and many others that make Edwards Semi-Trailers easy to service in any section of the country.

A limited number of territories available to selected dealers. Write on letterhead for complete details.

CORRUGATED, PANEL, OPEN-TOP, PLATFORM AND ALUMINUM TRAILERS IN MANY STYLES, OR TO YOUR SPECIFICATIONS

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Rush data on ( ) Edwards Trailers
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Inspectors from Missouri

(CONTINUED FROM PAGE 162)

to headquarters. The headquarters executives, having the only overall picture of the whole state, with a record of the past work and an eye to the future, may or may not endorse the purchase of the equipment, depending on recommendations and the type of future work planned for that division.

It is the aim, however, of the Bureau of Equipment to provide all shops with modern, labor-saving precision equipment which will save maintenance costs. The point is that such purchases are not made on whim but on surveys of the need.

If the purchase of a piece of garage equipment is authorized, the inspector supervises the installation of the equipment so that it will have maximum accessibility which will result in the greatest use.

A FULL-POWERED, ALL-PURPOSE, EXTRA HEAVY-DUTY MODEL **NOW** FOR AS LITTLE AS

$445.00

Hypressure Jenny often repays its cost 4 or more times a year in time and money saved by cleaning equipment *before* repairs . . . removing road dirt that often adds as much as 400 pounds extra weight to a load . . . revealing cracks and defects for repair before costly road failures occur.

Hypressure Jenny cleans garage and shop floors, pits, grease racks, runways, walls, windows, etc. 8 to 10 times faster and better than you can clean them by hand.

Hypressure Jenny is compact, portable, safe and easy to use. Ordinary labor can operate it.

MAIL TODAY!
We'll make a FREE SURVEY of your cleaning requirements and estimate the savings you can effect with Hypressure Jenny Steam Cleaner. No obligation.

HYPRESSURE JENNY DIVISION
HOMESTEAD VALVE MANUFACTURING CO.
Serving Since 1892

REQUEST FOR SURVEY

Hypressure Jenny Division
Homestead Valve Manufacturing Co., P.O. Box J-90 Coraopolis, Pa.

We employ ..... mechanics on repair work.
We overhaul or recondition . . . ☐ cars, ☐ trucks, ☐ buses each month.
We paint . . . ☐ cars, ☐ trucks, ☐ buses each month.
We're interested in cleaning ☐ floors, ☐ walls, ☐ windows, ...
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Based on above facts, please show us the savings or extra profit HYPRESSURE JENNY can produce.

Company.....
By.....Title.....
Address.....
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The Headquarters Shop

OUT of the ten division garages, the headquarters garage at Jefferson City, handles both a road division and the headquarters work. This is also the central parts depot and a clearing house for work sent to it from other state garages. It has a machine shop, a storage garage, a parts warehouse. John O'Rear is superintendent of this garage, working directly under and responsible to the headquarters office of the Bureau of Equipment. He directs the repair shop, the machine shop, the parts department, the live storage of cars and trucks, which include those of state highway officials and the highway patrol.

Fred Heckel is shop foreman and responsible to Sup't. O'Rear. Heckel directs the work in the shop and handles the employes of the shop and machine shop.

Much of the shop work at headquarters is on headquarters equipment as well as on the equipment of the highway division.

Shop Foreman Fred Heckel (left) deals an order to mechanic at portable bench

Dual Job for Foreman

HECKEL, the shop foreman, spends two days of each week in the field. This is not duplicate effort because his duties are to check jobs recommended by the inspectors, since headquarters gets the reports made by general inspectors just as other divisional garages. Heckel, having a dual responsibility of servicing headquarters equipment using the garage and

(TURN TO PAGE 166, PLEASE)

FRICTIONAL VALUE NEVER CHANGES
FOR EVERY MAKE, MODEL AND BRAKING SYSTEM
NON-COMPRESSIBLE
4 REASONS WHY
"friction-engineered"
AXLE SETS GIVE GREATER MILEAGE AND REDUCE MAINTENANCE COSTS
GENTLE ON DRUMS

● American Brakeblok axle sets combine more desirable qualities—in a greater degree—than any other brake lining. They are *right* for your equipment from the start . . . "friction-engineered" for specific makes, models and braking systems. And they *stay right*—maintain their correct frictional characteristics from first mile to last.

In addition, American Brakeblok axle sets make frequent adjustments unnecessary. Slow-wearing and non-compressible, this lining does not bleed, compress or distort in the most severe service. And it treats drums *gently*. Use "friction-engineered" axle sets on every unit in your fleet—for economy—for safety!

3 SERIES—FOR EVERY BRAKING SYSTEM

"Regular"—An all-purpose lining recommended for mechanical and hydraulic brakes. Rolls and axle sets.

"1,000"—Engineered primarily for longer life with powerful vacuum booster systems. Also for air brakes where there is need for faster brake action than is provided by "2,000" Series. Axle sets only.

"2,000"—Designed to provide maximum mileage and efficiency under extreme conditions with air brakes or powerful vacuum systems. Axle sets only.

"C" Series—Thick blocks for air brakes or powerful vacuum systems.

NAPA

American Brakeblok is distributed through 39 NAPA Warehouses, assisting jobbers everywhere to give prompt, complete service.

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BRAKE LINING

AMERICAN Brake Shoe COMPANY
AMERICAN BRAKEBLOK DIVISION
DETROIT 9 MICHIGAN

Inspectors from Missouri

(CONTINUED FROM PAGE 164)

highway division equipment in the garage and in the field, goes to the field to decide whether to do certain jobs in the field or have them brought into the headquarters garage. He knows the shop work schedules and what can be handled and when.

Since inspectors only cover a division three or four times a year, the two days in the week, have the tendency to reduce needed work as a result of the inspections by the general inspector.

This high-lift tractor typifies diversity of equipment in Missouri fleet

Heckel usually drives directly to some known road job. For instance he went to a black-topping job near Fayette. The crew was placing an automatic asphalt mixing machine into operation which scooped up the winrowed gravel and mixed it with the proper amount of heated asphalt and discharged the mixed material in the rear.

The start was delayed by failure of a two-cylinder asphalt pump engine on a supply tank truck, which pumped the cold asphalt into the mixing machine as it went along. The asphalt mixing machine, being a complicated piece of equipment was regularly in charge of a traveling mechanic.

This two-cylinder engine was old, used a magneto for ignition, and had infrequent use, since it only operated when asphalt was to be pumped. Together Heckel and the mechanic checked it over. Heavy rains had caused water to get in the gasoline. The magneto was weak and the points were oily.

This was routine until the road foreman said they had lost more time from that one little engine than all the rest of their troubles put together.

Heckel said: "If that's the case you won't lose much more. We have a completely overhauled unit exactly like this at headquarters garage. It is in perfect condition. You bring this unit in early tomorrow morning and we will install the rebuilt engine and rebuild this one."

(TURN TO PAGE 170, PLEASE)

"Cleveland" HOOKS

BINDING—GRAB—TOWING—END GATE
CHAIN—SNAP—SPREADER CHAIN

Drop forged from open-hearth steel, scientifically designed and expertly made "Cleveland" Hooks stand up under terrific strain. They've got to be tough *and are tough.*

THE PROOF OF THEIR DEPENDABILITY IS THE PREFERENCE MANIFESTED FOR "CLEVELAND" BY LEADING MANUFACTURERS.

Only two sizes of our large and complete line are illustrated below.

FOR BIG JOBS

Drop Forged and Heat Treated—Ready to Apply

CHAIN HOOKS

Size Round
7/16
1/2
5/8
3/4

Send for Catalog 22B

Covering the complete line of "Cleveland" Irons

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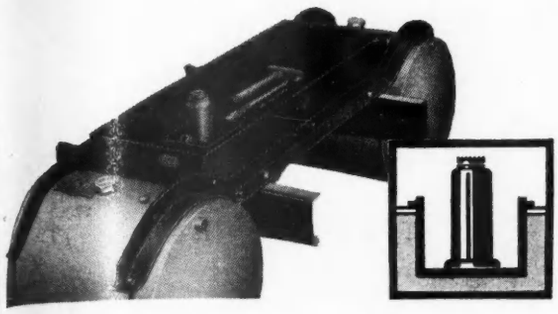


PRIOR SET showing position of hydraulic jack in tool chest jack well.

END-FILL CYLINDRICAL TANK for installation on any panel, stake or dump body truck. It can be mounted on side or under body. This tank is excellent for buses. End-fill neck is adjustable, permitting use on left or right side.

Safety Tanks TRIP COSTS!

PATENTED AND OTHER PATENTS PENDING.

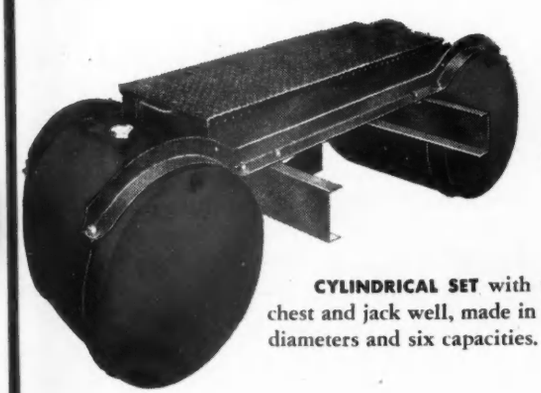
All Prior Safety Tanks have that simpler - than - ever installation — no holes to drill in the truck frame. They are rugged and built to give you long maintenance-free service. Prior Safety Tanks are made of 12-gauge steel electrically lap welded. Brace and anchor for pick-up line are welded in place. They are pickled, oiled and prime coated for rust resistance. All Prior Safety Tanks are guaranteed against defects in material and workmanship. They are pilfer-proof and safety fused to guard against explosion in case of an accident. A ball check in the vented filler cap prevents leakage of fuel should the truck be overturned. Prior Safety Tanks, of course, are Underwriters' Laboratory Re-Examination Service listed.

For truck tractors there are the especially designed and built popular Prior Sets. These in-great-demand Sets are safe, dependable, convenient and modern looking. They contain a handy, spacious tool chest with a jack well that keeps the hydraulic jack upright and out of the weather. The 4-way non-skid cover is standard with Prior. It can be locked securely and when closed serves as a catwalk for the operator. Sets are available in OB-Round or Cylindrical tanks.

There is a Prior Set, Pair or Single that will meet your requirements exactly. Just send in the coupon below for complete information and the name of your nearest distributor of PRIOR SAFETY TANKS.

PRIOR PRODUCTS, Inc.

Box 349, Middletown, Ohio • Box 7608, Dallas, Texas



CYLINDRICAL SET with tool chest and jack well, made in two diameters and six capacities.

MAIL TODAY TO NEAREST ADDRESS

PRIOR PRODUCTS, Inc. Box 349, Middletown, Ohio
Box 7608, Dallas, Texas

Please send me complete information on Prior Safety Tanks and the name of your nearest distributor.

NAME_____

STREET_____

CITY_____

STATE_____

Inspectors from Missouri

(CONTINUED FROM PAGE 166)

Decision to Trade-in

WHAT happens when inspectors recommend that trucks or other units be traded in?

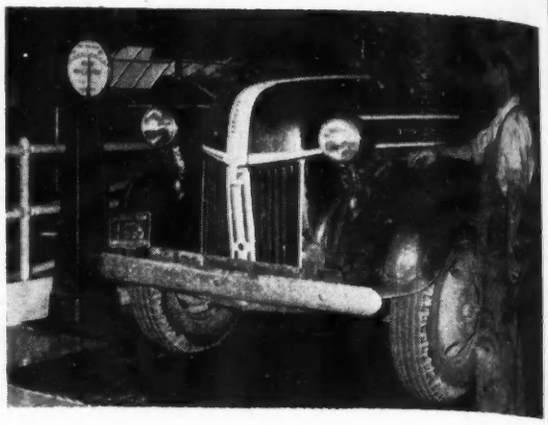
We went to Supt. Cummins for that one.

"One phase of our job here is to keep in touch with the overall picture of the road work in the state and the equipment we have to do it with," he said.

"Our decision has little effect on the duty of an inspector to turn in a recommendation to trade in on a new one. He may be right and we may not do it. For instance he might recommend a trade in lieu of repairs on a unit in a certain division. Here at headquarters we might have the information that the road work in that division is drawing to a close for several months and the demand on the equipment will be less. Consequently in such circumstances we will not be in any hurry to replace the unit with a new one and in fact would not until new work schedules had been made for the division and we knew something about what the future demand would be on equipment."

Parts are bought at headquarters

(TURN TO PAGE 172, PLEASE)



Equipment at headquarters job includes this front end alignment machine, giving the "once over" to a standard Ford V-8

Most equipment at headquarters garage is mobile. With this drill press stand there is no limit to size of work

Let the Buyer be Sure!

YES, ANY Air Compressor buyer today can be sure of full value if he knows the importance of the PAEA label. He can buy with as much confidence as if he had his own laboratory and could test the various machines for overall efficiency. The PAEA label on an Air Compressor guarantees that the unit which bears it equals or exceeds the minimum commercial standards filed in Washington, D. C. and that it is built for safe operation. It means high efficiency and low current cost. It's the easiest way to buy Air Compressors . . . just look for the PAEA label and insist upon it before you buy.

A copy of Commercial Standard CS126-45 is available from the U. S. Government Printing Office

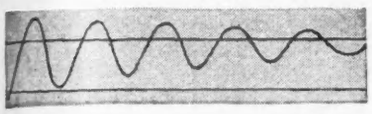
MEMBERS, MANUFACTURERS AND DISTRIBUTORS

American Brake Shoe Co., Kellogg Division
Brunner Manufacturing Co.
Champion Pneumatic Machinery Co.
Curtis Pneumatic Mchy. Div.
Dayton Air Compressor Company, The
DeVilbiss Company, The
Erie Meter Systems, Inc.
Gardner-Denver Company
Gilbert & Barker Manufacturing Company
Globe Manufacturing & Compressor Co.
Ingersoll-Rand Company
Lynch Corporation Par Compressor Division
Quincy Compressor Company
U.S. Air Compressor Co., The
Wayne Pump Company, The
Weaver Manufacturing Co.
Westinghouse Air Brake Co.
Worthington Pump & Machinery Corporation

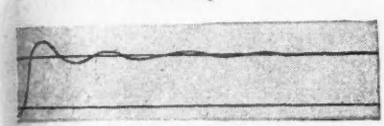
PNEUMATIC AUTOMOTIVE EQUIPMENT ASSN.
1108 CLARK BUILDING PITTSBURGH 22, PENNSYLVANIA

When a Man is "All In"

He Can't Go All Out for You



STANDARD TRUCK CUSHIONS — Poor take-up of shock followed by rough rebounds. Drivers take up to 50,000 shocks like this a day.



BOSTROM HYDRAULIC SEAT—Soaks up the initial shock and levels out—like a passenger car ride.

THESE ENGINEERING RIDE-GRAPHS tell you better than words why . . . Safety slips! Schedules lag! Equipment and cargoes take abuse!

Yes... Bostrom hydraulic seats more than pay for themselves by reducing driver fatigue. You get additional savings by cutting seat repair bills. Ask your dealer for a demonstration. For free folder, "12 Eye Openers Concerning Truck Seats" write:

BOSTROM MFG. COMPANY
133 West Oregon Street • Milwaukee 4, Wisconsin

There is NO Substitute for a Bostrom Ride!

BOSTROM

Bostrom Hydraulic Seats now standard or optional equipment on the following trucks: GMC, Diamond T, Federal, Hendrickson, Peterbuilt Walter, Ward La France, FWD, Dart, Oshkosh, and Coleman. Specify Bostrom Model 47 Seats on your new trucks.

A BIG GAME HUNTER
NEEDS SPECIAL EQUIPMENT

YOUR CARS AND TRUCKS NEED

PURITAN *Super 60* BRAKE FLUID

We're not telling you anything when we say that commercial car service is in no way comparable to passenger car usage. But we can tell you that Puritan Super 60 Brake Fluid was developed to more than meet the demands of the heavy duty service that trucks and commercial cars experience.

Especially compounded from organic materials, Puritan Super 60 Brake Fluid surpasses every specification you would set up for a brake fluid for this severe duty.

BOILING POINT 370°F: No danger of brake failure due to vaporization.

POUR POINT 60°F BELOW ZERO: Remains free flowing and mobile even in Arctic weather.

NON-GUMMING AND NON-OXIDIZING: Has a special base that does not gum or oxidize under any operating conditions.

MOISTURE ABSORPTION: Capable of absorbing all moisture of condensation—thus protecting wheel cylinders and metal parts against corrosion.

INERT TO RUBBER: Does not cause rubber cups to swell or deteriorate.

MISCIBLE: Mixes completely with all other brake fluids. Safe to add to any hydraulic brake system.

To play fair with your commerical cars and trucks you should use a brake fluid that is made exclusively for them. The use of Puritan Super 60 Brake Fluid, will pay off in dependable, trouble-free hydraulic brake operation and longer periods between servicing. Start getting the benefits of this superior "miscible" brake fluid by adding it whenever a shot is required. Better still get your cars and trucks off to a clean start by flushing the brake system with Puritan Hydraulic Brake Flushing Fluid and a complete refill job with Puritan Super 60 Brake Fluid. Your N.A.P.A. jobber can fill your needs today.

1823-1948

125 YEARS OF CHEMISTRY FOR TRANSPORTATION

PURITAN COMPANY, INC.

ROCHESTER 6, NEW YORK

HYDRAULIC BRAKE FLUID AND FLUSHING FLUID • GASKA-SEAL NO. 1, 2 AND 3
SHOCK AND KNEE-ACTION OIL

N·A·P·A
Assurance of Quality

Inspectors from Missouri

(CONTINUED FROM PAGE 170)

and are disbursed from the headquarters parts depot to the headquarters garage and the nine other divisional garages. Each division headquarters garage stocks from $25,000 to $50,000 worth of parts.

The headquarters garage often repairs parts of equipment for all the other garages. For instance they built stainless steel burners for tarpots, a repair replacement, for the whole system. Some other items are handled on an exchange basis. Magneto repairing at headquarters is a complete and fully implemented service. In the field and in divisional shops, magnetos are usually exchanged.

Parts and supplies are naturally purchased at the most advantageous price, considering the need and the quantity. While inspectors, traveling mechanics are allowed to use field purchase orders for the purchase of any needed thing, each purchase made in the field must be consistent with time saved and urgent need, or otherwise come from the central warehouse where probably it was purchased in quantity for less money.

When an engine is down, probably under the green tree, and all the parts are there except a 90-cent gasket that they didn't know they would need, the mechanic uses his field purchase order, to save time and money for the state.

Another phase of handling the inspection reports turned in at headquarters as pointed out by Mr. Cummins, was their use as a means of determining the kind and amount of parts to buy. A sheaf of reports might recommend engine overhauls for ten trucks of a single make. Knowing that these jobs would take out of stock the usual parts a replacement order can be placed before the work starts. Stocks can be examined, too Mr. Cummins said, before engines are torn down, to see if parts are available. In following this plan, even during the worst period of the critical parts shortage, the department had few items of equipment down awaiting parts.

END

(Please resume your reading on P. 66)

"HOW can I get extra pep into that old rig of mine?"

"HOW can we get more payload mileage between pull-down jobs?"

"HOW can we cut repair expense to offset higher operating costs?"

HOW?

...Install LO-EX Pistons of Alcoa Aluminum!

SNAPPIER PERFORMANCE! Lo-Ex Pistons fit closer —give better compression—because they combine T-slot design, cam-ground finish and low-expansion alloy. And they're *light!* Less vibration—less load on rods and bearings.

LONGER SERVICE! Lo-Ex Pistons are tough. Fleet records prove they outlast cast-iron pistons. Lo-Ex Aluminum Alloy has plenty of strength to withstand thrust and impact.

RUN COOL! Lo-Ex Alloy carries away heat 2½ times faster than cast iron. Improves lubrication. Makes engines run longer between overhauls.

Whatever make of aluminum piston you buy, it pays to specify "Lo-Ex"—the name that identifies piston castings of genuine Alcoa Aluminum. ALUMINUM COMPANY OF AMERICA, 1916 Gulf Bldg., Pittsburgh 19, Penna.

LO·EX *Pistons* of Alcoa Aluminum

REGISTERED TRADEMARK

ALCOA

Selecting Safe Drivers

(CONTINUED FROM PAGE 68)

runs through four of the tests, and manual dexterity runs through more than one as well. Thus, the characteristics detailed above will not belong to any one test.

All of the tests in the booklet are easily administered and the longest one takes 5 min. by stop watch. There is one test covering the past experiences of the applicant which is not timed and which taks about 20 min. to complete. At the present time, this test booklet contains all of the tests to be administered. It is anticipated that future research will reveal additional tests which will be included in future editions or possibly used as a supplement to the present edition. It is even possible that simple apparatus tests will be developed to be used only in a supplemental maner. For this reason, additional spaces are provided to permit the recording and plotting of up to ten test scores.

Here's how the system was put into use:

Test Procedure

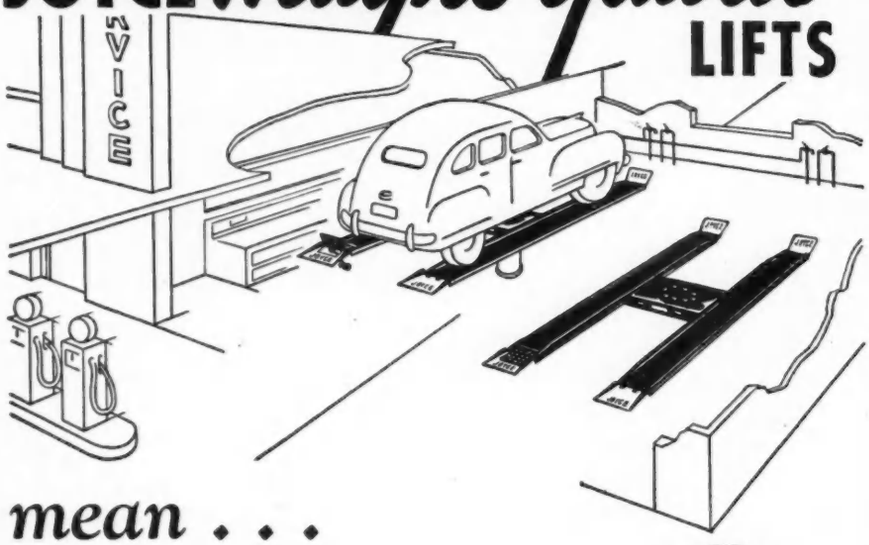
EACH person tested was given a number. The psychologists had access to all the records of the even numbered men with whom they were experimenting, while the transit lines kept the records of the odd numbered men a secret. This created a check group. In other words, the psychologists were to set the standards on the basis of experience with the even numbered men, and then tell the company how well the odd numbered men had worked out on the job, purely on the basis of their test scores.

The list given to the company showed how each man was rated by the psychologists. A score was given depending on the number of tests he had passed. Out of tthe five tests indicating good driving ability, the men who passed 4 or 5, were rated as "A"; those who passed 3 were rated "B"; and those who passed 2, 1, or none, were classed "C." The results are shown in Tables I, II, III (page 176). Accident figures are on an annual basis, i.e., if a man had one accident in three months, then his yearly rate is 4.00 accidents.

When the results were checked, it was found that the drivers could thus be divided into three groups on the basis of the tests, with the best group of men serving over three times as long, on the average, as the poorest group, and with the best group having over 3½ times as many drivers free from chargeable accidents as the poorest group. These figures are taken from the odd numbered men—the ones the psychologists rated on the basis of test performances alone.

(TURN TO PAGE 176, PLEASE)

JOYCE "Magne-Guard" LIFTS



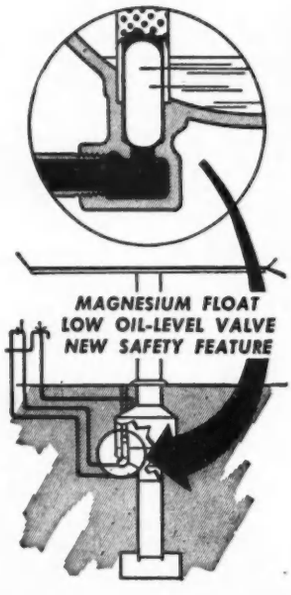
mean . . .

MORE WORKING SPACE

New Joyce Magne-Guard Full Hydraulic Automotive Lift saves valuable working space because the oil tank is an integral part of the Jacking Unit. This tank is buried in the same excavation made for the Jacking Unit, thereby, saving considerable installation cost and increasing your working space. The installation complies with all codes and meets universal installation conditions.

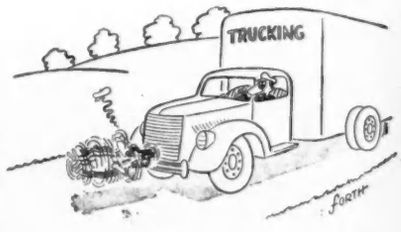
This newest development in the lift industry is available now with either Drive-On or Free Wheel Superstructure.

Write today for complete information on Joyce Magne-Guard Automotive Lifts.



IN CANADA:
Midland Foundry & Machine Co., Ltd., Midland, Ont.

THE JOYCE-CRIDLAND CO.
DAYTON 3, OHIO, U. S. A.



Hop in Sam, it's started now!"

PERFORMANCE GOES UP IN SMOKE

UGH...SIGNAL for FEDERAL-MOGUL BEARINGS

Worn engine bearings put the "Indian sign" on engine performance. Truck owners lose performance when worn engine bearings permit oil pumping. Excess oil reaches combustion chambers, carbon-fouls pistons, valves, plugs and rings. Costs more "wampum" to operate, too.

When you read smoky exhaust signals, replace worn bearings with Federal-Mogul Oil-Control bearings for renewed power, pep and economy! FEDERAL-MOGUL SERVICE, Division of Federal-Mogul Corporation, Coldwater, Michigan.

Replace in Sets with Genuine

FEDERAL-MOGUL

Oil-Control Bearings

FEDERAL Mogul

The Complete Line — Almost 7,000 Numbers:

Engine Bearings • Bushings • Connecting Rod Exchange • Reconditioned Connecting Rods • Rebabbitted Connecting Rods • Connecting Rod Bolts and Nuts • Bearing Metals • Laminated Shims • Solders

Selecting Safe Drivers

(CONTINUED FROM PAGE 174)

The figures forecast the results to be expected when the testing program is put to regular use.

Test Results

TABLES I, II, III show both the number of "At Fault" accidents and the total number of accidents of all kinds, both "At Fault" and "Not At Fault." Table III shows the percentage of each class of men who were completely free from any chargeable accidents.

It will be seen that the "A" group is consistently better than the other two groups and that the "C" group drivers have a definitely high rate of accidents, and that almost all have "At Fault" accidents. The general overall average number of "At Fault" accidents per year figured by this method is 3.70. By selecting only the Class "A" drivers, the number of "At Fault" accidents would be reduced by an even 20 per cent. Referring to Table II, showing the results of all accidents, the overall average is 11.2 accidents and, in this case by choosing only the "A" group, the reduction of all accidents amounts to 12 per cent. These figures of 20 per cent and 12 per cent are what can be expected when the testing procedure is applied to a new group of drivers.

Tests at the transit lines included both bus and street car operators. Street car operators have more accidents than bus drivers, but in this case there were so many men who worked both kinds of equipment that the experience of all could not be separated for study. What the results show is that the same abilities, or lack of them, are the causes of street car accidents as are causes of bus accidents. (When applied to truck drivers, it follows that the man who is prone to have accidents will have them with trucks as well as any other type of equipment.)

Table III shows that 32 per cent of the "A" drivers went without chargeable accidents during the test period. Of the "C" group, only 9 per cent of the drivers had such records. In short, the chances of hiring an accident free man are 1 in 3 if you hire only Class "A" men while those chances are only 1 in 10 among the class "C" men.

(TURN TO PAGE 178, PLEASE)

TABLE I—Average Number of "At Fault" Accidents (Yearly Rate) per Rated Group:

Group	No. of Tests Passed	No. of Men	Average No. of "At Fault" Accidents
A	5, 4	28	2.00
B	3	21	3.30
C	2, 1, 0	22	5.00

TABLE II—Average Number of Accidents (All Kinds) per Rated Group.

Group	No. of Tests Passed	No. of Men	Average No. of Accidents
A	5, 4	28	9.0
B	3	21	10.7
C	2, 1, 0	22	12.0

TABLE III—Percentage of Each Rated Group who were FREE from any "At Fault" Accidents.

Group	No. of Tests Passed	No. of Men	Percentage FREE of "At Fault" Accidents
A	5, 4	28	32.1
B	3	21	28.6
C	2, 1, 0	22	9.1

WESCO
What to look for in Tire Chains—
DESIGN—snug fitting zinc plated side chains, heavy brass plated cross chains, easily operated fasteners that will not jam.
MANUFACTURE — Steels selected for long wear. Welded on special automatic machines—each link is a "strongest."
PACKAGING—in permanent, moisture resisting fibre cases. They resist rust and tarnish — are easily stored and carried.
Combine all these features and you have WESCO TIRE CHAINS. The preferred chains for passenger cars, buses, trucks and tractors.
WESTERN CHAIN COMPANY
1807 W. BELMONT AVE. CHICAGO 13, ILLINOIS

* FRED BEERS, INC.
FREEPORT, NEW YORK

Yes, significant for Fred Beers, Inc. *and for all fleet owners!* This fleet of speedy home-delivery trucks and huge tractor-trailer units is a tough test for any motor oil. And by the record—actual performance records that included careful, detailed checking on repairs, mileage, lay-ups, and over-all operating expenses—Wolf's Head Heavy Duty Oil assured the kind of protection this fleet demands.

Fleet owners who use Wolf's Head *top-quality* Oils and Lubes exclusively get superior performance from their equipment. And to keep maintenance and operating costs at a minimum—to reduce lay-ups for service and repairs—many fleets—both large and small—follow the sound operational and maintenance practices of Wolf's Head Laboratory Control Service Plan . . . offered free-of-charge to fleet operators. Wolf's Head Oil, Wolf's Head Lubes, and Wolf's Head Laboratory Control Service will assure longer life and increased efficiency for every unit in your fleet. We invite your inquiry and would be pleased to have a representative call to tell you more about the results that other important fleets are getting with Wolf's Head. Wolf's Head Oil Refining Co., Inc., Oil City, Pa.; New York 10, N. Y.

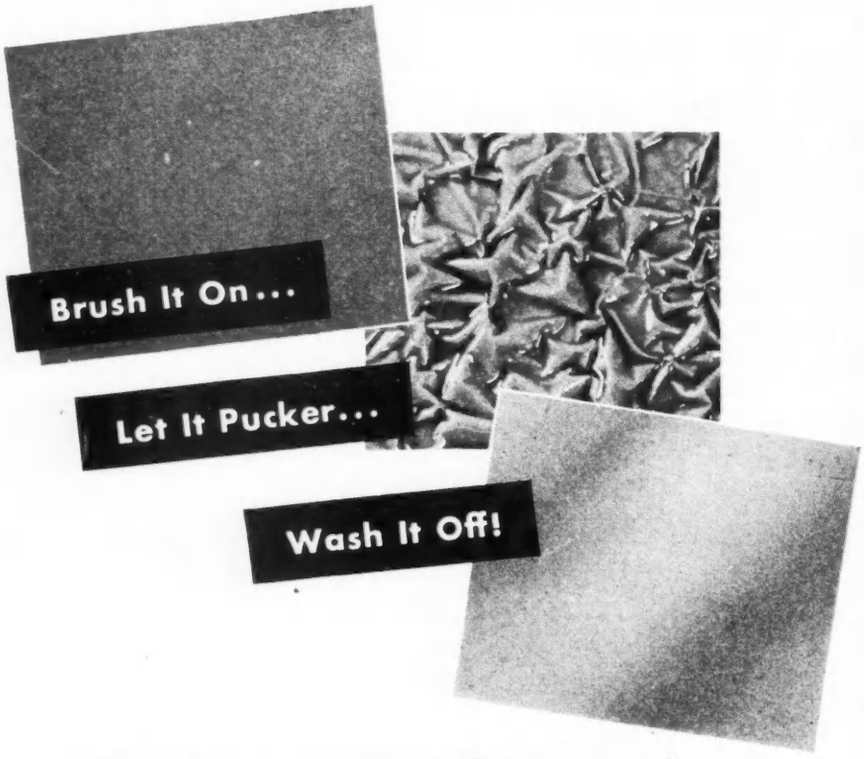
WOLF'S HEAD

MOTOR OIL AND LUBES

100% Pure Pennsylvania
—"Premium Grade"

P. G. C. O. A.
Permit No. 6

You Can't Beat MAGNUS STRIPIT When You're Stripping for Repainting!



Here's a Typical Example...

A Midwestern bus company with a program of 55 buses up for repainting in 1948 was not very happy with the job . . . they didn't like the stripper they were using. At just about the start of the program they saw a demonstration of Magnus Stripit. This so impressed them that they staged a new comparative test on one of their buses, with four stripping compounds.

Magnus Stripit came out with flying colors . . . safer, faster, easier to use and most economical. They've been using Stripit since February, one man stripping a 37-passenger bus, ready for repainting, in 14 hours, and using 4 gallons less per bus than any other stripper they ever tried.

PROPERTIES OF MAGNUS STRIPIT

- Non-inflammable.
- Spreads evenly.
- Safe on all metals and wood.
- Clings to vertical surfaces.
- Evaporates slowly . . . Retains stripping action for long periods.
- Puckered coats readily removed by cutting stream of water.
- Hand work reduced to a minimum.
- 1 gallon covers 100 square feet of surface.
- One application strips several coats including primer.

WRITE FOR FULL DETAILS

MAGNUS CHEMICAL COMPANY
38 South Ave., Garwood, N. J.
In Canada—Magnus Chemicals, Ltd., 4040 Rue Masson, Montreal 36, Que.
Service representatives in principal cities

IN FLEET MAINTENANCE IT'S
Magnus
CLEANERS • EQUIPMENT • METHODS

Selecting Safe Drivers

(CONTINUED FROM PAGE 176)

A follow-up at approximately 18 months, as shown on Table IV, serves to further strengthen this approach to driver selection. This chart shows the "A" group average of "At Fault" accidents at 1.4 per year, against an overall of 1.8. In other words, hiring only the "A" group of men would have resulted in a reduction of 20 per cent in chargeable accidents over an 18 month period.

TABLE IV—"At Fault" Accidents After 18 Month's Service*

Group	No. of Men	"At Fault" Accident Rate	Percentage of drivers with less than one accident per year
A	35	1.4	40.0%
B	28	2.0	21.4%
C	10	2.6	20.0%
Over-All	73	1.8	30.1%

* The men reported in this table are from both the experimental group and the group the company held as a check. This combination was made because of the continued termination rate. It should be noted that the "C" group bears out the earlier prediction of more rapid termination.

The Table also shows that 40 per cent of the "A" group had a rate of from zero to not more than a fraction of 1. This compares to 21 per cent for the "B" operators, and 20 per cent for the "C."

Generally speaking, the driver who is least liable to have accidents has more of the abilities that will make him satisfied with the job and stick to it. This, of course, is not unexpected for it is reasonable that the man who has the abilities to perform the job properly will stick to it longest, be a more stable employee, and make fewer mistakes at it.

We believe we have taken a step toward developing a serviceable, inexpensive means of screening men, at the time of hiring, to eliminate the less able from the job. We see it as a definite service to the employee himself in that a man who is hired on a job for which he does not possess the aptitude has only a failure or a job that is too tough staring him in the face. He would be much more happily adjusted in a job for which he is better fit.

We are finding that the good employee is a good all-around employee: he is a good operator, punctual in reporting for duty, has fewer acci-

(TURN TO PAGE 180, PLEASE)

The Greatest Terminal of Them All

There has been nothing yet developed to equal BRASS as a material for replacement terminals

There have been many unsuccessful attempts to make a terminal that would equal this time-proved leader!

But a six-year record of ever-increasing sales proves that the Crescent Wiry Joe extra-heavy brass terminal continues to climb farther and farther ahead—*at a rate faster than any other type.* Here are a few of the many reasons:

1. A CRESCENT WIRY JOE extra-heavy brass terminal, with its extra-heavy lead coat, assures a tight, positive connection!
2. A CRESCENT WIRY JOE extra-heavy brass terminal won't stretch when tightened on the battery post—a good connection every time and all the time *—regardless of the number of times it may be removed!*
3. A CRESCENT WIRY JOE extra-heavy brass terminal does not set up oxidation—*eliminates the use of wire brushes and vaseline!*

√ Check the wire on every job!

THE CRESCENT COMPANY, INC.
PAWTUCKET, RHODE ISLAND

WHEN NEXT IN OUR NEIGHBORHOOD, DROP IN...SEE HOW CRESCENT WIRY JOE AUTOMOTIVE CABLE IS MADE FROM COPPER TO FINISHED PRODUCT IN ONE PLANT UNDER ONE ROOF

Selecting Safe Drivers

(CONTINUED FROM PAGE 178)

dents, has more friends, is a better union man. He comes closer to having everything one would think of when he speaks of a good man.

We see now that this good employee in the driving job is the one who has the necessary abilities to perform the job.

Psychological Research Center for Business and Industry is a private concern owned by the authors. It has no connection with the University of California which as a tax free institution is not permitted to engage in commercial research.

Testing Service Available

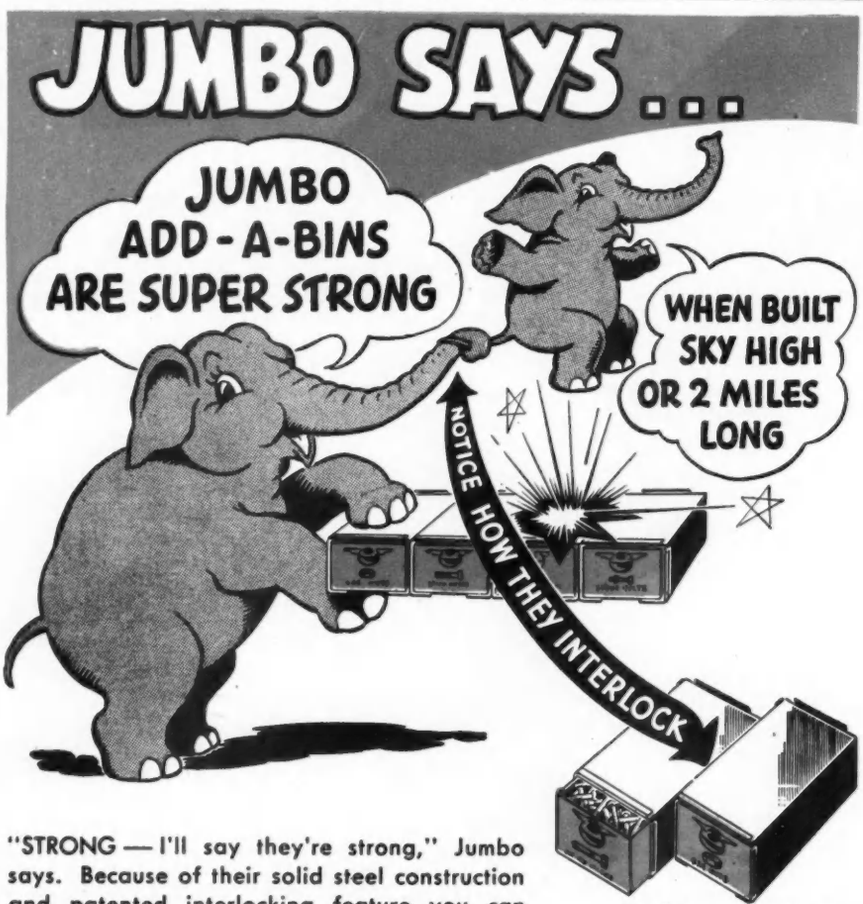
IN order for a fleet to avail themselves of the service, they should write directly to Phychological Research Center, 721 West Jefferson Blvd., Los Angeles 7, Calif.

Complete instructions to the examiner are provided without extra charge with each shipment of test booklets. These include scoring stencils showing the correct answers, and directions for the simple clerical routine necessary to arrive at the final score for each person tested. The test booklets themselves contain complete instructions on administration including sample items for practice and the time limits for each test.

The testing service is sold at the rate of $1 per person tested. Cost is determined by the extensive research involved in standardizing the tests, rather than by the cost of paper and printing. This is presented as a service, not merchandise. The research will continue as each user of the service reports his experience. Research is especially sought in the "Biographical Information" blank on the back of the booklet. This blank has to be calibrated to suit local conditions.

END

(Please resume your reading on P. 69)



"STRONG — I'll say they're strong," Jumbo says. Because of their solid steel construction and patented interlocking feature you can really build yourself a sturdy parts bin as you buy your DORMAN PRODUCTS.

6½" long - 3⅞" wide
3¼" high

Remember when you buy your needed small parts in JUMBO ADD-A-BINS you are getting the metal storage bins at the same time.

Some of the many items available in ADD-A-BINS are Sheet Metal Screws, Brass Fittings, Cap Screws, Nuts, Lock Washers and Cotter Pins.

Your Automotive Wholesaler has them. As Jumbo says:

"THEY INTERLOCK!"

The Quality Line That's Easy to Find

DORMAN PRODUCTS

DORMAN PRODUCTS Inc.
CINCINNATI, OHIO

NEW "PRESTONE" ANTI-FREEZE

National Carbon Co., Inc., has announced a new and improved "Prestone" anti-freeze this year. The base of the new product is still concentrated ethylene glycol, but it contains new heavy-duty corrosion and foam inhibitors.

The freezing protection given by the new "Prestone" anti-freeze is the same as the former formula, and there is no change in the official protection chart. However, the specific gravity is changed, and anti-freeze testers designed for "Prestone" anti-freeze produced before 1948 will not correctly read the freezing protection of the new product.

"Run into a rough stretch of road, Joe?"

Delco

alone offers a Complete line of Shock Absorbers

Engineers think of Delco first when they specify shock absorbers—because they know that Delco has the capacity for quantity production . . . that Delco has the engineering know-how to solve their shock absorber problems. They know, too, that Delco has the largest service-distributing organization in the industry . . . that only Delco offers a complete line of shock absorbers —direct acting, single acting, double acting and knee action—in a full range of sizes and capacities for passenger cars, buses, light and heavy trucks.

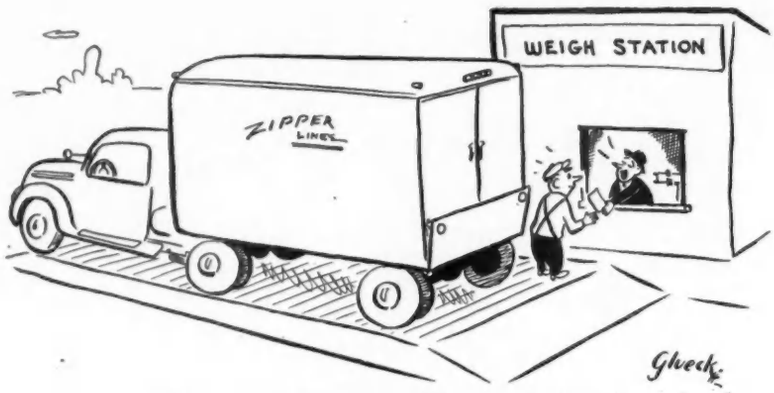
And because engineers recognize these advantages, motor vehicle manufacturers today are using more Delco shocks as original equipment than any make of shock absorber.

DELCO PRODUCTS DIVISION
GENERAL MOTORS CORPORATION
DAYTON, OHIO

UNITED SERVICE MOTORS

DELCO SHOCK ABSORBERS
A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS

Delco *HYDRAULIC SHOCK ABSORBERS*



"Here you are—your weight and fortune!"

"DOUBLE PAY"

with every Bendix Drive Sale

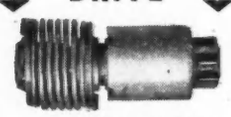
It's "double pay" when you replace with a genuine Bendix* Drive—the installation is cash from your customer, and the old Drive is worth money to you when it's returned to your Bendix Drive Central Distributor in its original box.

The old Bendix Drives are scrapped—that is your assurance that the Bendix Drive you sell is brand new and thoroughly efficient.

Replace with the genuine Bendix Drive—your customers get twice the satisfaction and you get "double pay."

*REG. U. S. PAT. OFF.

INSTALL THIS DRIVE



RETURN THE OLD ONE IN THIS BOX

THEY'RE WORTH MONEY!

Genuine Parts give Genuine Service

Bendix Drive

ECLIPSE MACHINE DIVISION of ELMIRA, N. Y.

Bendix AVIATION CORPORATION

Dodge Sixwheelers

(CONTINUED FROM PAGE 71)

independent propeller shaft lines, the line on the left hand side being divided into two sections with a midship bearing in the pillow block of the forward rear axle.

The torque divider permits the drive to each axle to transmit equal torque and is supplied with a high and low gear ratio to meet varying load and road conditions. By proper selection of ratios for the axles and torque divider, the truck operator can meet satisfactorily the operating conditions usually requiring a two-speed axle in a conventional truck.

The torque divider ratio is selected by convenient cab control. This unit also incorporates an inter-axle locking differential which may be locked out at low speeds if desired.

To meet the special operating conditions of the six-wheelers, the frame is fitted with reinforcements of heavy-duty outside channel type running full depth to the end of the frame.

Air brakes are standard equipment. Rear spring suspension is of full floating type designed to equalize the load between the two driving axles.

The engine for this model is the same as for the basic "V" model, a 6-cyl., L-head model with 3¾ in. bore x 5 in. stroke, 331 cu in. displacement, having a maximum bhp of 128 at a governed speed of 3000 rpm.

Standard tires are 9.00/20, 10 ply mounted on 7.00 in. rims. The clutch is a 13 in. model with 177.8 sq. in. of frictional area, and transmission has five speeds with direct in fifth and offers dual power take-off openings.

Since this model is intended exclusively for highly specialized service, the user is urged to cooperate with dealers in the selection of available combinations of equipment to suit his operating conditions. The available combinations of tire size, axle ratios, and transfer case ratios to suit the requirements of gradeability and road speeds are readily obtained from any Dodge dealer.

END

(Please resume your reading on P. 72)

Ready for the SPLASHIEST months of the year?

Install Trico's "Two Little Squirts" NOW ... they'll keep windshields clear every mile of the year.

Windshields become "mud shields" all too frequently during fall and early winter months. Dirty mist blots out vision ... makes driving hazardous.

More and more truck and bus operators throughout the country are equipping their complete fleets with Trico Automatic Windshield Washers so that without time-losing roadside stops drivers can touch a button and have a crystal-clear view of the highway. *More than 2,000,000 Trico Washers are in service.*

Your own shop, or any truck or bus service department, can quickly and easily make installations.

Trico Windshield Washer Solvent makes the Washer usable the year round except when driving with an extremely cold windshield, Improves washing efficiency. Prevents jar breakage due to freezing. Non-injurious to car finish.

Trico Products Corporation, Buffalo 3, N.Y.

TRICO *Windshield Washers*

Fully Automatic ... Nothing to Pump

Transportation Tax May Be Reduced

THE chances are that the next Congress will be favorably inclined to vote some tax relief for the trucking industry.

The federal tax on transportation of property appears to be one of the strongest candidates for tax reduction and possibly even for elimination. But the current 20 per cent federal excises on automobiles, automotive parts and accessories, and tires and tubes probably will be continued in their present forms.

Trucking industry spokesmen have made an excellent case to Congress for reduction or elimination of the transportation tax. And most of the legislators have been impressed with their arguments that the tax pyramids costs and prices of virtually all commodities and thereby falls most heavily on persons in the lower income brackets. It has been estimated that elimination of the tax would cost the Federal Government about $317,000,000 annually in loss of revenue.

The 81st Congress, when it convenes in Washington next January, will undoubtedly take up the all-important task of making cuts in excises now applying to certain selected commodities and services.

However, a general revision of excise taxes just isn't in the cards at this time.

The entire problem of excise tax legislation for 1949, based on present plans of majority leaders, can be summed up this way: (1) Eliminate some taxes, (2) reduce others, and (3) broaden the base to make up for the lost revenue.

The long-range view to support this program is this: Many legislators feel that the Federal Government has for some years been drifting into the error of relying too heavily on the revenue derived from income taxes.

Until recently excise taxes had never been an important source of revenue. They were applied in good times and taken off in poor times and always have resulted in floods of protests from both retailers and consumers.

The trend which now is gaining more and more favor both on Capitol Hill and in the executive branch of the Federal Government is that excise taxes should be increased in number and shifted to the manufacturing level.

Here these taxes would become a permanent part of the nation's tax structure. And, over a period of years, excises would be applied to more and more products and commodities, so that eventually an excise tax would be levied on almost every article produced in the United States.

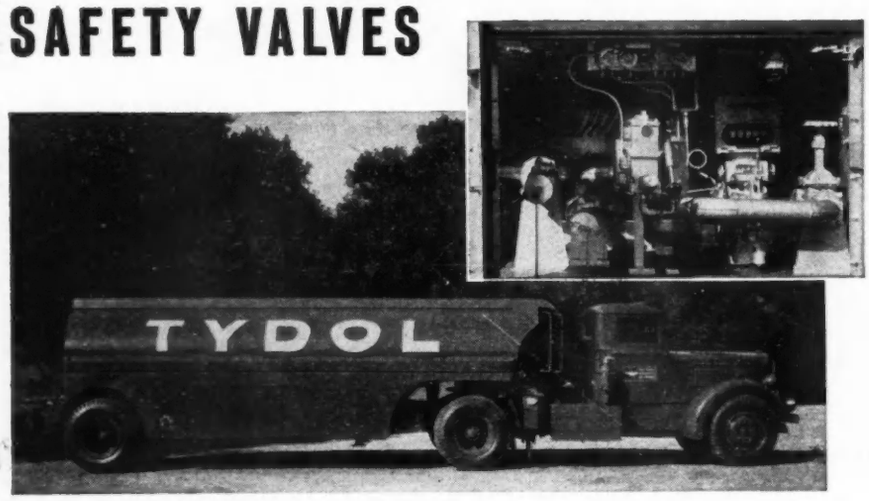
An old adage among congressmen serving on the two revenue committees of Congress is that collecting taxes is like plucking a goose—"you want to get the most feathers with the fewest squawks."

As every businessman realizes, the problem of tax reduction is directly related to the problem of reduced federal expenditures. Taxes cannot be cut until the cost of running the Federal Government can be cut.

If business continues to be good and incomes remain high, the Treasury Department will reap a large return from income taxes and the so-called luxury taxes.

(TURN TO PAGE 186, PLEASE)

TIDE WATER ASSOCIATED
USES S&J INTERNAL
SAFETY VALVES



In the petroleum industry, no phase of the business receives more careful attention than SAFETY in handling. Just how well this policy has paid off is reflected in the very small number of accidents in proportion to the tremendous gallonage handled.

Tide Water Associated Oil Company is one of the major marketers who have equipped much of their delivery equipment with S. & J. Internal Safety Valves. They protect the product, the equipment, the driver, and the public in cases of fire or highway accident. Your inquiries are invited.

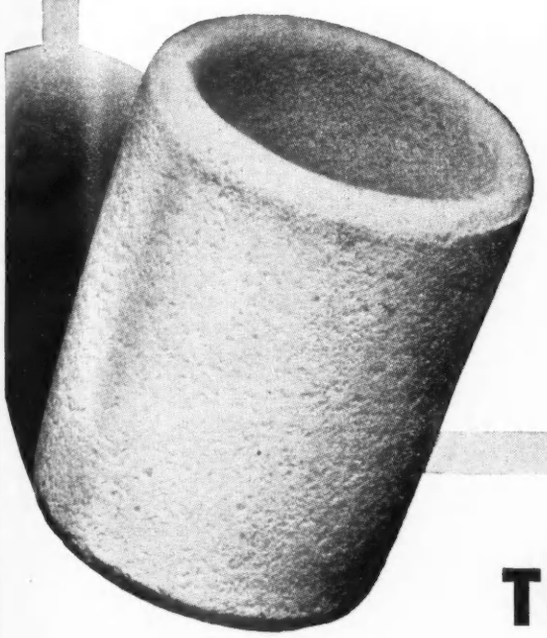
SHAND & JURS CO.
BERKELEY, CALIFORNIA
NEW YORK CHICAGO HOUSTON LOS ANGELES SEATTLE

SHAND & JURS

Special Tilt Body

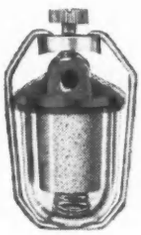
Autocar truck body and its companion trailer body, designed especially for hauling hog fuel to Oregon power plant

Stops Particles as Small as 1/25,000 of an Inch



Yet allows free flow of fuel

The CARTER CERAMIC FUEL FILTER



The Carter Ceramic Fuel Filter
Retail Price — $2.10

Its element of specially prepared porcelain thoroughly *filters* gasoline—providing a steady flow of fuel free from dirt, lint, water and other harmful matter.

Order from your nearest Carter distributor or jobber

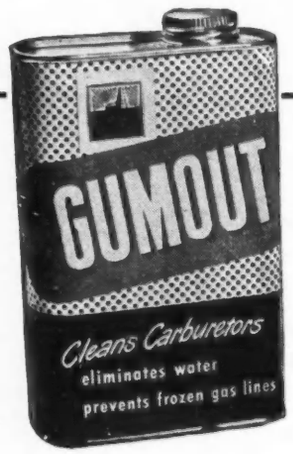
The Carter Foursome Filter
For trucks, buses, stationary engines
Retail Price — $7.35

CARBURETER
TRADE MARK REG. U. S. PAT. OFF. MARCA REGISTRADA

602

CARTER CARBURETOR CORPORATION • **St. Louis 7, Missouri**
Division of American Car & Foundry Co.

Your truck fleet runs better with Clean Carburetors



REGULAR use of Penn Drake Gumout will eliminate annoying, costly carburetor and fuel system troubles—will keep your truck fleet operating longer at top efficiency.

Gumout is composed of 100% active ingredients . . . powerful undiluted solvents. Added to gasoline every 1,000 miles (one pint to each 10 gallons), it dissolves gum and foreign deposits . . . keeps carburetors, fuel pumps and fuel lines efficiently clean. Operators report gasoline savings up to 20% . . . improved acceleration . . . less time lost for engine tune ups . . .

Gumout is supplied to fleets in 5 gal. pails; 15, 30 and 55 gal. drums (sold in pint cans by retail outlets). Write today for full details. Or, mail a trial order for 5 gallons.

PERFECT BENCH CLEANER

Gumout is a top quality bench cleaner . . . will do a superb job in your service shops. Gumout cleans faster with less labor.

PENNSYLVANIA REFINING CO.
2692 Lisbon Road Cleveland 4, Ohio
Butler, Pa. *Edgewater, N. J.*

Transport Taxes

(CONTINUED FROM PAGE 184)

But, if the level of business activity takes an unexpected drop, most or all of the excises now in effect may have to be retained for the revenue they will bring into the federal coffers.

Congress feels that if all or most of the excise taxes are ultimately levied and collected at the manufacturing level, the consumer will not squawk too loudly. Taxes would be paid by the manufacturers and the feeling on Capitol Hill is that most consumers would be unaware that the selling price of an article includes a "hidden" levy tacked on at the manufacturing level.

A further argument for broadening the base of the federal tax structure to include permanent manufacturers' excise taxes as well as income taxes is that the job of balancing the budget would become simpler. The national revenue, it is argued, would over a period of years tend to become less sensitive to the ups and downs in total amounts of revenue collected under the present tax structure which is based principally on the income tax.

Proponents of the manufacturers' tax say that consumers always buy each year a certain minimum of goods and services. People will naturally buy less in bad times than in good years, but certain cost-of-living items like clothing, furniture, and certain household appliances are always in demand.

A more or less steady and constant flow of revenue into the federal treasury should therefore aid in achieving greater national financial stability and should make the balancing of the national budget an easier and more predictable task.

Both Representative Knutson, Republican, of Minnesota, chairman of the House Ways and Means Committee, and Senator Millikin, Reublican, of Colorado, chairman of the Senate Finance Committee, agree that the next tax relief to be granted by Congress will be in the field of excise taxes.

But they warn that any cuts will be small, and that cuts will be made only if the budget for fiscal 1950 will permit reductions. And they insist that any forthcoming reductions will be selective in nature, and will not be in the nature of general excise reductions.

It appears almost certain that the chief source of the Federal Government's annual $7,500,000,000 revenue from excise taxes will be retained—at least for the foreseeable future. Therefore, little or no tax relief can be predicted for such products as liquor, tobacco, automobiles, and automotive parts, gasoline, firearms, refrigerators, radios, and the like.

In other fields, some tax relief seems more likely for 1949. For such commodities as jewelry, furs, toilet preparations, luggage, handbags, and wallets there may be exemptions granted for the lower-priced articles. Excises on transportation,

(TURN TO PAGE 188, PLEASE)

BRIGHT, RICH 4-HOUR DRY FINISHES RENEW THE FACTORY FINISH

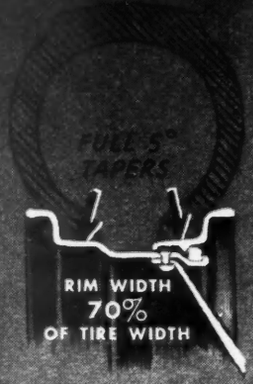
Now, give all types of commercial vehicles a colorful, glossy finish—that stays glossy. Sun, rain, heat and chemicals simply can't penetrate HARDCOTE 4-HOUR DRY FINISHES. Save maintenance costs. Easy to apply—easy to wash—less frequent repainting. Send for color card and information!

McDOUGALL-BUTLER CO., Inc.
BUFFALO 5, NEW YORK • *Fine Finishes Since 1887*
Branches:—Auburn, Me. · Washington, D. C. · Salem, Mass.

KELSEY-HAYES

The Truck Wheel with the Improved 3-Piece Wide-Base Rim for . . .

GREATER SAFETY-ECONOMY!



SAFER and EASIER
TIRE MOUNTING

SAFER and EASIER
TUBE INSERTION

SAFER and EASIER
WHEEL ASSEMBLY

SAFER and EASIER
RING LOCKING

ALSO **Increases Tire Mileage 20% to 50% and Cuts Installation and Servicing Costs!**

This *Kelsey-Hayes* Truck Wheel with the improved 3-piece wide-base rim is the most modern of its type ever offered! In addition to the new convenience in mounting and dismounting tires, it provides operators of trucks and fleets with the many important advantages of the wide-base mounting and the five degree angle in the bead seats for longest tire life . . . . .

This *Kelsey-Hayes* Truck Wheel is especially necessary where the brunt of extra hard service demands the utmost tire conservation for greater mileage. This *Kelsey-Hayes* wheel assures better load distribution, greater tire stability, air volume and road contact, yet reduces tire running temperature and pressure to help prevent blowouts. See your nearest K-H distributor today.

Available in all Popular Sizes for Leading Makes of Trucks

Know How . . . ASSURES PROVEN RRODUCTS AT . .

KELSEY-HAYES WHEEL COMPANY
DETROIT 32, MICHIGAN

Wheels—Hub and Drum Assemblies—Brakes—"Vacdraulic" Brake Power Units—for Passenger Cars, Trucks, Buses—made by Kelsey-Hayes' 4 Michigan Plants and Windsor-Canada Plant • "Magdraulic" Electric Brakes—"Lathan" Vacuum Power Brake Equipment for Tractor-Trailers—made by Kelsey-Hayes' South San Francisco-Lathan Plant. Wheels—Hubs—Axles—Parts for Farm Implements—made by Kelsey-Hayes' French & Hecht Plant at Davenport, Iowa.

GET ALL THE LUBRICATION GOOD OIL PROVIDES!

WGB CLAROFICATION

Assures Lower Lubrication Costs... Longer Engine Life

AND HERE'S WHY: The WGB replaceable Filter Cartridge—co-partner of the WGB Oil Clarofier—is made from a specially processed fine cotton . . . not paper or so-called modern "synthetics". Intensive laboratory tests prove conclusively: That correctly processed, properly formed and adequately supported cotton is the most efficient filtering medium for all kinds of oil. Further, WGB Clarofication thoroughly cleans the oil—without removing essential additives or other lubricating qualities.

Road tests show WGB Cartridges outlasts others by a ratio of 2 to 3—that engine repairs drop to a new, unheard-of low! The WGB Cartridge also provides the lowest filtration cost—and can be changed without tools!

Is it any wonder that Autocar . . . Brockway . . . Mack and many other leading truck builders continue to factory-equip their vehicles with WGB? Get to know the advantages and economies that result through WGB Oil Clarofication! Your Distributor has the proper WGB Clarofier for your motor.

WGB CARTRIDGES
Easiest to Replace
. . Lowest in Cost

WGB

OIL CLARIFIER, INC.

KINGSTON, N. Y.

Transport Taxes

(CONTINUED FROM PAGE 186)

business machines, telephone, telegraph and wire services may be next in line for reduction.

Tax officials estimate that the Federal Government now derives about $100,000,000 annually from excises on jewelry. Another $50,000,000 is collected annually from sales of toilet preparations, and about the same amount is collected in revenues assessed against luggage and leather goods sales.

Therefore, Congress will weigh this prospective loss of revenue carefully before voting even modest reductions in excises. It is up to businessmen to point out to Congress that lower taxes generally encourage investment, capital expansion, and the level of business activity.

Chairman Knutson summarizes the tax outlook in this way:

"Our federal internal revenue system must be based on a well-balanced tax system. It should not be confined to the income tax, or to the income tax and excise taxes on liquor, tobacco, and beer alone. To do so will seriously cripple the federal revenues and throw the entire burden of supporting the activities of the Federal Government upon a few, chiefly those paying the income tax. The income tax does not reach the man living on his capital or the man deriving his income from tax-exempt securities.

"Furthermore, the income tax is one of our most unstable sources of revenue. In times of active business, when capital is gainfully employed and profits are large, the government collects large revenue from the income tax. When industry and commerce slow down, capital ceases to work, profits disappear, and the income of many individuals vanishes as well as our taxes.

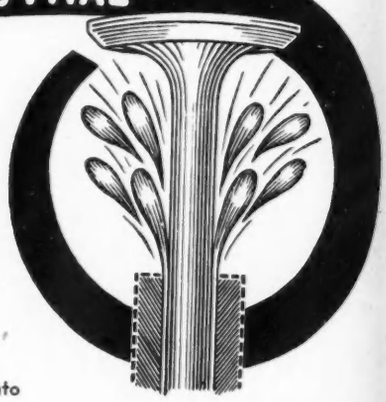
"This is why the income tax fails to produce revenue in periods of decline, as is shown by the experience in 1932 when we had to impose additional excise taxes to head off a deficit because the revenue from the income tax had declined to such an extent that it was insufficient to meet the costs of government.

"To depend too much upon such a tax will place an intolerable burden upon the active American businessman, the man with a salary, and the successful professional man, thus preventing business expansion and production as well as individual incentive."

EGGLESTON OFFICE

Franklin S. Eggleston, formerly manager of the Rhode Island Truck Owners' Assn., has announced the opening of his office as a motor carrier consultant at 1904 Industrial Trust Bldg., Providence, R. I. He will be available for consultation covering all matters affecting the operations of motor carriers, both intra and interstate.

WHY VALVE PACKING is VITAL



IT'S just as important to use a packing for an intake valve as it is to use steel type expander rings on a piston. Although neither is a part of original equipment they both play a vital part in preventing excessive oil consumption.

Save oil for your customers—and at the same time make a neat extra profit—by installing Perfect Valve Packings on every valve and ring job. The graphite seal that is built into these packings makes it impossible for oil to pass through a worn intake valve guide.

No Tools necessary

There is a "Perfect" Packing for every car, from an Austin to a Mack.

PERFECT VALVE PACKING

Perfect Valve Packings were developed through years of laboratory and road testing. They are the largest selling valve packing on the market, endorsed by thousands of enthusiastic users.

From your jobber.
Do not accept a substitute.

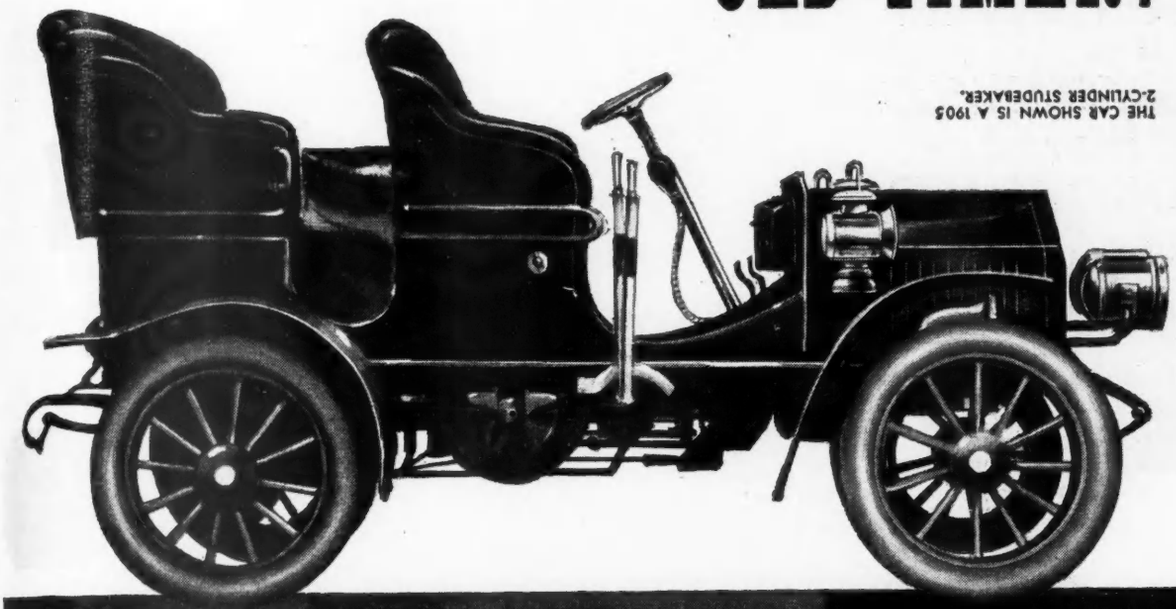
PERFECT PARTS, Inc.

55 Amsterdam Avenue
New York 23, N. Y.

Distributed by Wilkening Mfg. Co., and all NAPA Distributors.

can you recall this

OLD TIMER?



THE CAR SHOWN IS A 1903
2-CYLINDER STUDEBAKER.

CLAWSON & BALS

AN OLD TIMER IN AUTOMOTIVE PARTS BRINGS YOU COMPLETE CONNECTING ROD SERVICE

You can almost say that Clawson & Bals and the automotive industry have grown up together. For Clawson & Bals has been in the automotive parts business for thirty years, gaining the "old timer's" experience it takes to make the finest parts. These Clawson & Bals Genuine "Ring-True" parts are yours now in a complete line, including connecting rods and the other parts shown below. Your C & B Jobber will fill your exact requirements. Get in touch with him soon! Clawson & Bals, Inc., 2508 South Michigan Ave., Chicago 16.

IT TAKES EXPERIENCE TO MAKE THE FINEST PARTS

Genuine RING-TRUE PRODUCTS

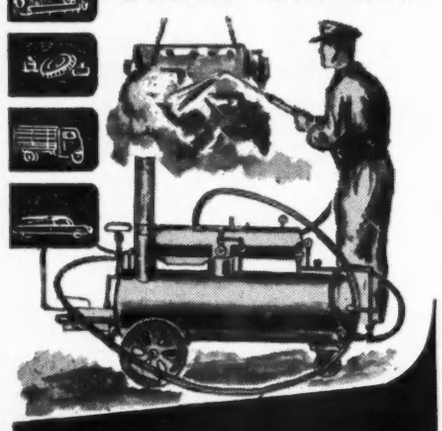
- Engine Bearings
- Rebabbitted and Reconditioned Connecting Rods
- Pistons and Pins
- Water Pumps and Repair Kits
- Spring Shackles
- Flexible Fuel and Oil Lines
- Hydraulic Brake Parts and Brake Hose
- Shock Links
- Valve Springs
- Babbitt Metal
- Chevrolet Rod Dipper

CLEAN...

IMPLEMENTS, MACHINERY
TRACTORS, MOTORS, PARTS
TRUCKS, CARS, ETC.

WITH STEAM!

Siebring
PORTABLE
STEAM CLEANER



The time-saving, cost-cutting Siebring Steam Cleaner is now making *big money* for repair and maintenance shops. Continuous flow of steam for hours assures fast cleaning on the toughest grease and dirt packed jobs by providing steam or hot water or *both* UNDER PRESSURE with powerful, cutting chemicals. First it knocks loose, then it dissolves and removes the firmest holding most stubborn dirt, grease and grime. It's low cost . . . it's portable . . . and it can be operated independently of city water pressure or electricity. Fast-heating electric model with thermostatic control also available. *Try It at Our Risk.*

Write today for illustrative literature and facts about Siebring's 10 Day "FREE TRIAL" Offer. See for yourself how the Siebring Steam Cleaner will save costly man hours and speed repair work; see how simple it is to operate. RUSH name and address, Dept. CC-1.

SIEBRING MFG. CO.
GEORGE, IOWA

CCJ Newscast

(CONTINUED FROM PAGE 110)

territories authorized in its certificate, unless otherwise authorized by the lessor.

Lessee while in possession of the vehicle assumes full responsibility for its operation.

Lessee must provide P. L. & D. as well as cargo insurance.

Lessor must provide fire and theft insurance covering the vehicle.

Lessee guarantees return of equipment in same condition as received, ordinary wear and tear excepted.

Lessee bears all expense of operation, maintenance and repairs.

Lessee agrees to return vehicle to lessor's terminal at point of interchange.

Arbitration machinery set up to serve in event parties are unable to agree on value of damaged vehicle or rights and liabilities of the parties.

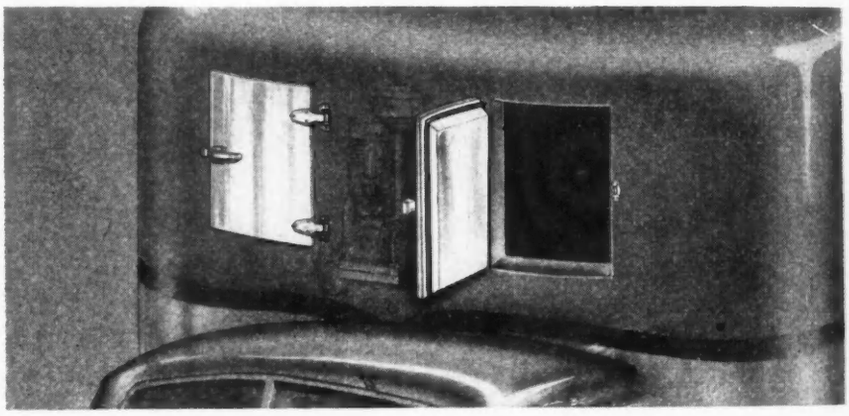
BRAKES LEAD ACCIDENT CAUSES

An analysis of mechanical defect accidents of motor carriers during 1947, just released by the Interstate Commerce Commission, indicates that . . . "as in all previous years, brake defects are responsible for more accidents than any other type of defect. Tire failures are second most frequent and result in the most property damage. Accidents due to defective engines, coupling devices, and wheels have been increasing more rapidly during the past two years than almost any other type of defects although there has, generally, been an increase for all defects."

The main points emphasized in the analysis are: (1) mechanical defect accidents are continually increasing; (2) as a percentage of all accidents, such accidents are decreasing; (3) compared with all accidents, mechanical defect accidents are almost twice as damaging to property but the casualty rates, both deaths and injuries, are approximately the same; (4) in general fashion, the same types of defects occur from year to year, with some variations due to outside influences such as availabilty of better tires after the war and increased production of trucks with consequent increase in coupling failures in drive-way operation; (5)"stopped accidents", which constitute a fifth of all accidents, cause over half of the fatalities; (6) bus operators showed a material imrovement last year in contrast with property carriers; and (7) most mechanical defect accidents are due to poor inspection and maintenance practices.

Tractor-semitrailer "brake accidents" constituted a higher percentage of all "brake accidents" than for any prior year. Whereas, for other years, the number of "brake accidents" on such vehicles were not as numerous as would be expected if based solely on a distribution of all reported accidents (which is the only basis for distribution and exposure by type of vehicle

(TURN TO PAGE 194, PLEASE)



D&G VENTILATOR DOORS

Complete—Ready To Install

for Trucks and Semi-Trailers

D & G Doors can be installed in much less time than is required to make and install a set of hand made doors. They fit neatly and you save time, keeping equipment rolling and saving shop facilities for other important work.

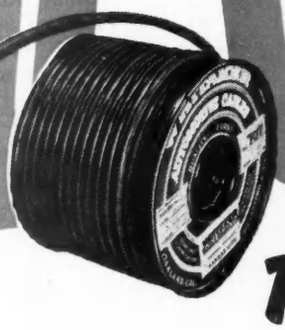
LOWER COST

Not only do you save in time but D & G Ventilator Doors cost much less than it would cost to make them by hand. They come all ready to install with chrome plated strikes, locks, and rubber gasket around edge for tight air seal. Completely insulated with 3" of insulation.

Available in Two Styles — Curved for front, Flat for back.

DROMGOLD & GLENN
332 South Michigan Avenue, Chicago 4, Ill.

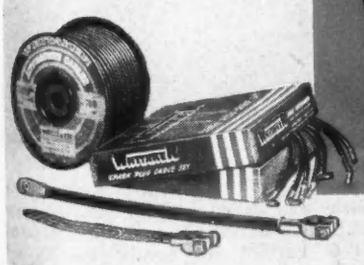
"707"



THE GREATEST SPARK PLUG CABLE FOR YOUR FLEET!

Extensive laboratory tests have proven that Whitaker "707" Spark Plug Cable will withstand higher voltages and deliver a hotter spark, due primarily to lower capacitance, than any other copper stranded spark plug cable. It's the most rugged cable for rugged fleet service . . . more dependable and longer lasting . . . and sheathed in superior neoprene to withstand greater frictional wear, extreme cold, heat, moisture, grease, oil and corona. Sold through leading jobbers everywhere.

Whitaker Label Assures Quality Cable



WHITAKER
CABLE CORPORATION

KANSAS CITY, MO.
ST. JOSEPH, MO.
PHILADELPHIA
LOS ANGELES

Pioneers and Leaders in Automotive Cable Products Since 1920

all Cleaning Jobs are easy

With PERMAG

— use No. 282 as a hot vat compound

• MOTOR BLOCKS • CYLINDER HEADS • CRANK CASES
DIFFERENTIALS • TRANSMISSIONS • SMALL PARTS

cleaned preparatory to repair or reconditioning. PERMAG never injures bearings or delicate parts.

We also furnish PERMAG Cold Cleaners. Write for details.

—for 25 YEARS PERMAG has made Cleaning Jobs easy, quick, economical

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—SO NOW WE CELEBRATE OUR TWENTY-FIFTH ANNIVERSARY!

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Main Office: 50 Court St. BROOKLYN 2, N. Y.

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Ask your jobber to show you MASTER & WHEEL CYLINDER KITS by THE EIS AUTOMOTIVE CORP

SO that you can do a better reconditioning job Eis Master Cylinder Kits contain more parts, including all the small parts you need for proper assembly.

Fewer kits for greater car coverage.

Main Cup is brass backed to prevent it from being damaged by the holes in the piston.

Both Master and Wheel Cylinder Kits are sealed—for your protection. Car coverage printed on every kit.

Eis Cups are tougher, designed for longer replacement life under severest service conditions!

EIS IMPROVED PRESSURE BLEEDER—Model T690 QMC. Heavy steel tank, very rugged. Fitted with improved "fast connection" adaptors. Only 5 minutes for twice-around bleeding. NOW AVAILABLE FOR IMMEDIATE DELIVERY

EIS BRAKE PARTS BRAKE CABLES BRAKE TOOLS BRAKE FLUID

Ask your jobber for EIS KITS. Write us if he can't supply you.

THE EIS AUTOMOTIVE CORP.

MIDDLETOWN, CONN.

CCJ Newscast

(CONTINUED FROM PAGE 190)

available), for last year both distributions showed that 79 per cent of the accidents were on tractor-semi-trailers. As in previous years, the single-unit vehicles were somewhat less likely to have a "brake accident" with a correspondingly greater likelihood of such an accident on trucks and full trailers and tractor-semi-full trailers.

The number of accidents caused by worn out trailers indicated that defects on trailers are more likely to be overlooked than on power units. Almost 16 per cent of the trailers involved in accidents were made prior to 1940, while only 9.1 per cent of the trucks and tractors were made before that time.

•

WESTERN STATES STUDY INSURANCE

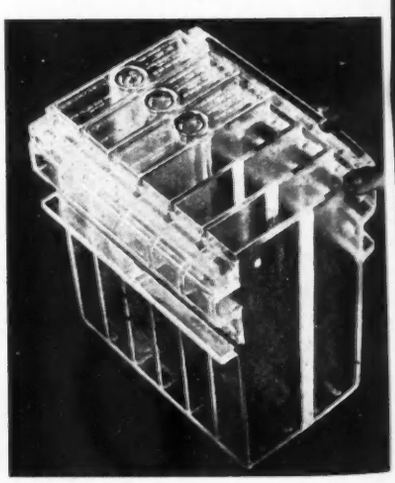
Plans have been completed for establishment of a Western Trucking Industry Insurance Advisory Committee, under the banner of American Trucking Associations, Inc., in a move to ease truck insurance problems in the eleven western states.

The committee will be composed of leading representatives in the west of the trucking industry, the insurance business, truck labor, insurance agents and insurance brokers. Its job will be to plan and carry through a long-range program designed to alleviate the insurance difficulties and related safety problems currently confronting motor truck owners in the eleven states.

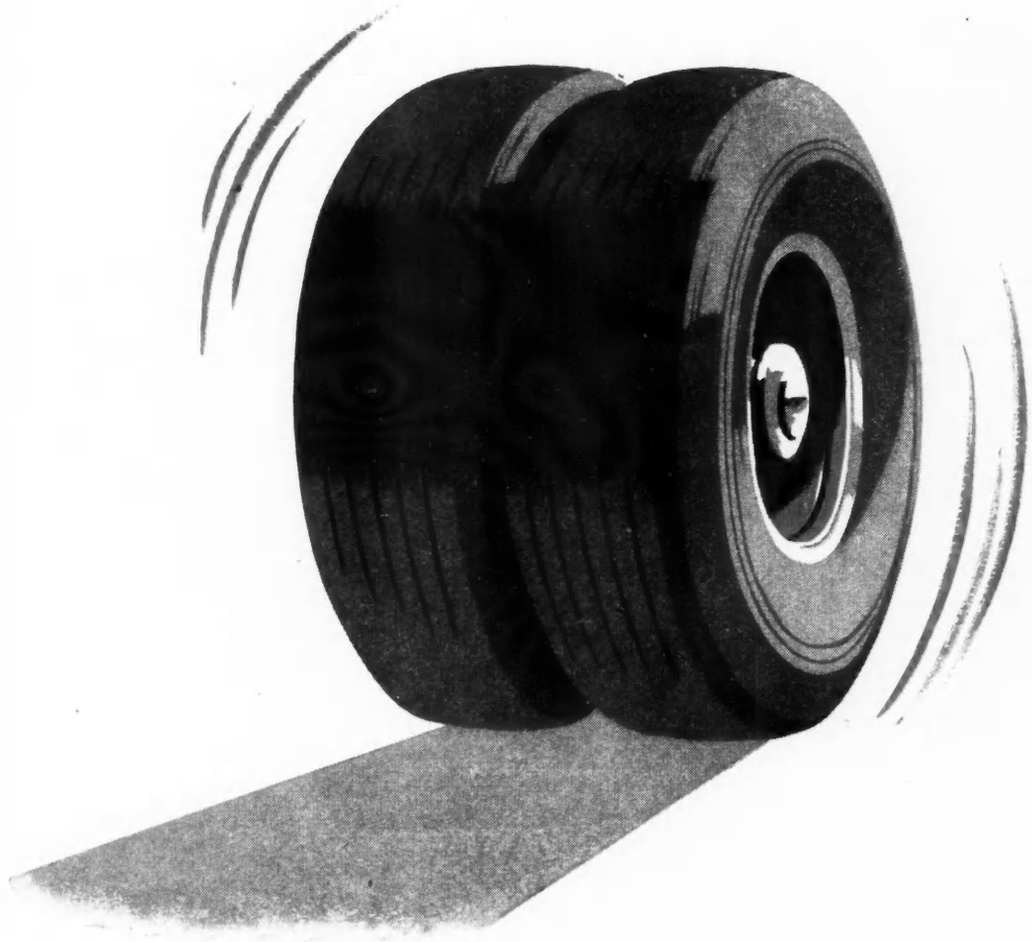
(TURN TO PAGE 196, PLEASE)

Exide Plastic Battery

The Exide Storage Battery, made with a plastic case and offering more starting power with less space and weight than any other non-spill, lead-acid battery in production, manufactured by The Electric Storage Battery Co., Philadelphia, won first award in the Industrial & Machinery Classification in the 7th Modern Plastics Competition sponsored by Modern Plastics



Magazine. Transparent polystyrene plastic was used as the container material. The battery is rated at 24 volts, and is capable of producing 15 hp for 3 minutes



Buses and trucks are rolling—but how's business?

WITH labor and equipment costs soaring, what's the outlook for net profits? One thing is sure—every bus or truck you own must earn its utmost.

Let Quaker State HD Oil help keep your equipment on the job and reduce your servicing expenses. Saves operating trouble, overhaul expense, and loss of revenue due to lay off of equipment for servicing. These are important items in any bus line or trucking business.

Quaker State HD Oil does double duty, too, by (1) lubricating better and longer; and (2) by keeping your engine working surfaces cleaner—free from clogging sludge, gum and sticky "varnish." Refined solely from pure Pennsylvania grade crude oil, it can be an important "cost-cutter" for you. Try it.

QUAKER STATE HD OIL
AND SUPERFINE LUBRICANTS

Use Quaker State HD Oil for trucks, buses, taxis, tractors. Use Quaker State Motor Oil for passenger cars.

QUAKER STATE OIL REFINING CORPORATION • OIL CITY, PENNSYLVANIA

SNYDER SAFETY TANKS

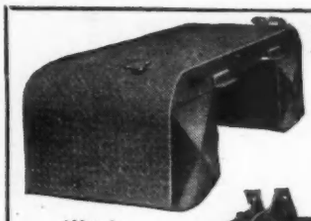
(Patents No. 2181772, 2273737, Others Pending)

MAKE TRUCK AND TRACTOR OPERATION SAFE & PROFITABLE

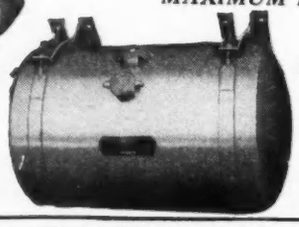
MAXIMUM FIRE HAZARD PROTECTION.

LESS REFUELING, FASTER, LONG SERVICE RUNS.

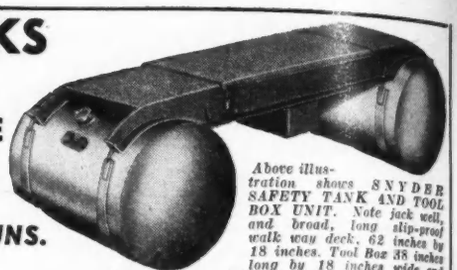
APPROVED BY THE UNDERWRITERS' LABORATORIES, INC.



(Above) SNYDER SAFETY SADDLE TANK



(Right) SNYDER SAFETY CYLINDER TANK



Above illustration shows SNYDER SAFETY TANK AND TOOL BOX UNIT. Note jack well, and broad, long slip-proof walk way deck. 62 inches by 18 inches. Tool Box 38 inches long by 18 inches wide and 5 inches deep. A long-needed receptacle for tools, chains, power jack, danger flags, etc. Contents always handy—safe and dry.

For Catalog and Address of Your Nearest Distributor, Write:

SNYDER TANK CORPORATION P. O. Box 2390, Birmingham, Ala. P. O. Box 14, Buffalo 5, N. Y.

THIS SPACE WAS RESERVED for advertising FLEET FORMS Cost & Service Record and related forms. However, as samples of these useful forms cannot be reproduced here, you are urged to ask for samples. The line includes, in addition to the Cost & Service Record, Preventive Maintenance Inspection Reports, Gas Pump Records, Shop Repair Orders, Driver's Reports, Service Orders and Reports and many others of which the ACCIDENT REPORT is newest. For your free sample package please address:

Fleet Forms

BOX 793, COLUMBUS 16, OHIO

CCJ Newscast

(CONTINUED FROM PAGE 194)

INDUSTRIAL NOTES

Rand Express Freight Lines, Inc., whose executive offices are in New York City, has just opened its newest terminal at 1031 North Fourth Street, Camden, N. J.

J. H. Williams & Co., Buffalo, N. Y., manufacturer of drop-forgings and drop-forged tools, announces the opening of a warehouse and sales office at 2266 East 38th St., Los Angeles.

Plans for establishing an aluminum trailer assembly plant in an eastern city have been revealed by T. C. Brown, president of Brown Industries, Inc., Spokane, Wash. Although its location was not named, the new plant will have a floor space of 70,000 sq ft and will serve Brown trailer distributing outlets in the central, eastern and southern states.

The Porte Mfg. Co., manufacturers of Porte Brand Brake Fluid, and other automotive chemicals, has moved offices to 334 Crescent St., Brooklyn 8, New York.

(TURN TO PAGE 198, PLEASE)

BODY BUOYS Float the Overload

Coil Overloads That Preserve Main Spring Resiliency

AUTOMOTIVE AIDS CORPORATION
7711 West Warren Ave.,
DETROIT 10, MICH.

PREFERRED FOR REPLACEMENT

SKF BEARINGS

Job Designed
KEN-TOOL
4-WAY RIM WRENCHES
They're built stronger to last longer... forged from only the highest quality steel... held to KEN-TOOL'S rigid standards. They're "Job Designed" to do tough jobs quicker... Best by Test!
See KEN-TOOL'S Complete Line At Your Jobber!
T-60
Standard Passenger
T-56
Heavy Duty Passenger
T-90
Light Truck
T-95
Extra Heavy Duty Truck Wrench With Hole For Leverage Bar
The KEN-TOOL Mfg. Co.
Akron 5, Ohio
Largest Exclusive Manufacturers of Tire and Wheel Changing Tools

FRUEHAUF TRUCK BODIES ARE BETTER— WHY PAY MORE?

BUY DIRECT AND SAVE

OIL FILTER ELEMENTS
for all Buses and Trucks

We have Users in your City
Ask us Who—
And get our prices.

REFILL FILTER CO.
120 Rhode Island Ave., East Orange, N. J.

SUPER-POWER

Center-Lift HERCULES Hydraulic Hoists and Dump Bodies

HERCULES STEEL PRODUCTS CORP.
GALION, OHIO

Better—but *not* more expensive!

SHULER AXLES

SHULER AXLE CO.
LOUISVILLE, KY.

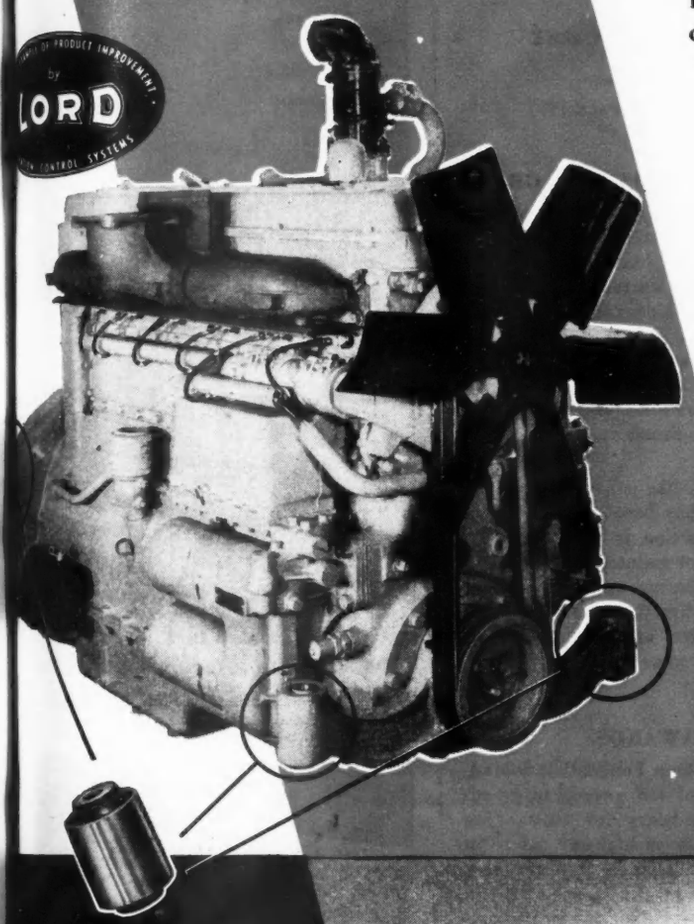
Brutes for PUNISHMENT

HALL-SCOTT Powered— PETERBILT TRUCKS Use LORD SHEAR TYPE ENGINE MOUNTINGS

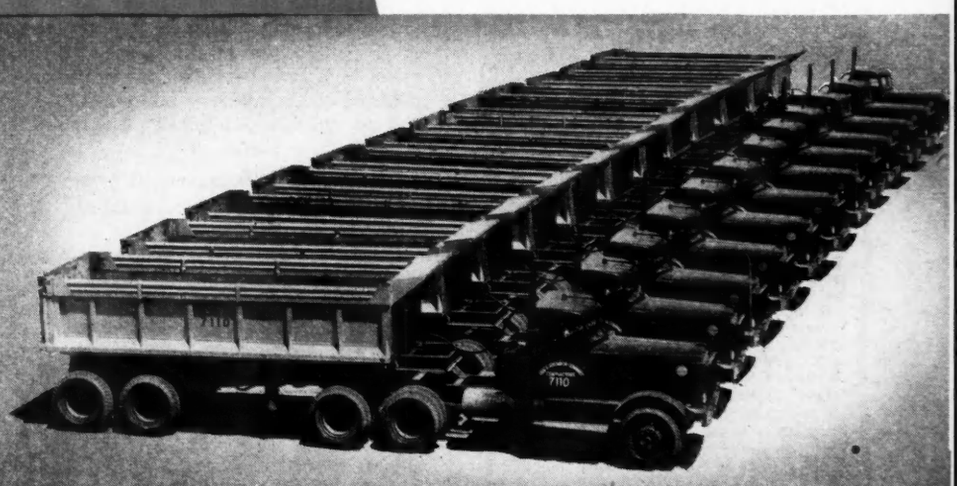
The Hall-Scott Model "400" Engine is one of the most powerful truck engines developed in this country. Twelve of them, installed in Peterbilt Trucks, are helping to make an airfield out of a mountain for San Francisco, in one of the greatest earth moving projects on record.

The Hall-Scott engine is supported by four Lord Tube Form Mountings—two at the gear cover, and two at the flywheel housing supports. They serve to isolate engine vibration, from the frame and the rest of the vehicle; absorb frame twist and prevent it from causing high stress in the engine; cushion road shocks; and reduce noise transfer to the cab and driver.

Whether you make powerful engines or delicate instruments, you can improve their performance, lengthen their life, and increase their sales, through the use of a Lord Vibration Control System. Bring your vibration problems to Lord—Vibration Control Headquarters. Write for Bulletin 900.



The Hall-Scott Model "400" Engine and one of the four Lord Tube Form Mountings which support it.

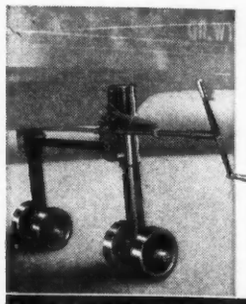


Twelve Peterbilt trucks powered by Hall-Scott "400" Engines, used by Guy F. Atkinson in the gigantic earth-moving job at Mills Field, San Francisco. Lord Mountings isolate engine vibration, absorb road shocks and frame twist, reduce breakdowns and improve performance.

LORD MANUFACTURING COMPANY, · ERIE, PA.
Canadian Representative: Railway & Power Engineering Corp. Ltd.

LORD Vibration Control Systems

Cal-Van
GARAGE TOOLS
2 and 3 FINGER TYPE
CARBON SCRAPER
LIGHT BULB PLIERS
RING COMPRESSORS
CREEPER CASTERS
BUSHING REMOVERS
REAMERS
GEAR PULLER
THREE-IN-ONE PULLER
WRITE FOR CATALOG
NO. 10 TIMING GEAR PULLER
Cal-Van
MACHINE PRODUCTS INC.
JACKSON, MICHIGAN, U.S.A.


HOLLAND
Improved Landing Gear
Load Lifting power unequalled by any other type 6" more ground clearance than other types
Fast, easy operation
SAFE — SIMPLE DURABLE
HOLLAND HITCH COMPANY
HOLLAND, MICHIGAN, U.S.A.

HAVING GLASS TROUBLE?

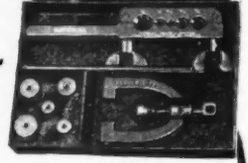
We can solve your problems with hard to break, shatter-resistant PLEXIGLAS*, the clear plastic which is becoming increasingly popular for truck and car doors. It will last the life of the vehicle when properly handled.

The use of PLEXIGLAS in motor vehicle glazing has been permitted in most states. Try it for 60 days, if for any reason you are not satisfied we will refund your money.

Year	Make	Net Price
41-47	Ford Door	$8.45
41-47	Chev. Door	7.85
40-47	Dodge Door	7.85
37-47	(EH) Mack Door	10.19
37-47	LFT Mack Door	12.45
41-47	White Door	8.45
39-47	G.M.C.	7.85
41-46	Studebaker	5.40
37-47	International	8.83

Others $2.75 to $12.50. Prices on request.
Terms: C.O.D. or cash with order, F.O.B. Aberdeen

ABERDEEN AUTO PARTS
Box 283-C Aberdeen, Md.
Phone Aberdeen 258
*PLEXIGLAS registered trade mark of Rohm & Haas Company.

IMPERIAL
Double-Flaring Tool
. . . for steel and other metal tubing

● Ideal for brake, gas and oil line work. Overcomes tendency of welded steel tubing to crack when flared with ordinary flaring tool. First, tubing is belled, Fig. 1. Then flared in conventional manner, Fig. 2.
No. 93-FB Double-Flaring Tool complete in metal kit.
Fig. 1. FLARING CONE ADAPTER FLARING BAR
Fig. 2. FLARING CONE FLARING BAR
Order From Your Jobber
THE IMPERIAL BRASS MFG. CO.
1209 W. Harrison St., Chicago 7, Ill.

CCJ Newscast

(CONTINUED FROM PAGE 196)

TREFFINGER HEADS NEW GROUP

At its first fall meeting held on Sept. 21, the newly-organized Fleet Maintenance Association of Philadelphia elected Ellwood F. Treffinger fleet supervisor of General Baking Co. as president. Other officers named were Paul Magee of Pyramid Motor Freight Corp. as vice-president; Elmer Burns of Canada Dry Ginger Ale, Inc., as tresurer, and Ed Martin of Davis Brake Co., 2415 N. Broad St., Philadelphia, as secretary.

The association, like others of its kind in various cities, has been organized as a medium for instruction in and discussion of all phases of fleet maintenance. Membership, already numbering upwards of 30, is open to anyone directly engaged in the maintenance of truck or bus fleets and in the position of foreman or above.

SLOAN RADIO AWARDS

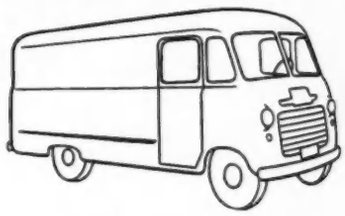
The Alfred P. Sloan Foundation has announced a group of ten awards to be offered the radio industry for outstanding service in the cause of highway safety in 1948. The twofold purpose of the awards is to pay tribute to the nation's broadcasters and artists for their important contribution to the highway safety movement, and to stimulate intensified effort in this field of public welfare.

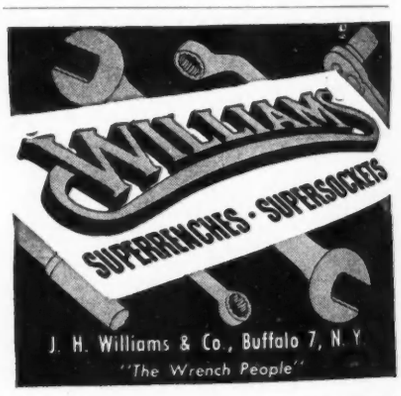
Awards will be administered by the Au-

(TURN TO PAGE 200, PLEASE)

BETTER than Ever Before
Repower with
RAMCO 10 up
PISTON RINGS

FLARES
FOG LAMPS
REFLECTORS
STOP LIGHTS
MARKER LIGHTS
CLEARANCE LIGHTS
DIRECTIONAL SIGNALS
SEALED BEAM CONVERSION KITS
ARROW SAFETY DEVICE CO.
MOUNT HOLLY, N. J.


VANETTE
Division of BROOKS & PERKINS, Inc.
2447 Woodward Avenue, Detroit 1, Michigan


WILLIAMS
SUPERWRENCHES · SUPERSOCKETS
J. H. Williams & Co., Buffalo 7, N. Y.
"The Wrench People"

Transport Cooler
is the modern Mechanical Refrigeration for transportation of Frozen Food - Meat - Produce and other perishables by Truck and Trailer.
Write, wire or phone for information
TRANSPORT COOLER, INC.
33300 THOMAS ST.
FARMINGTON, MICH. Phone 0765

Get ready for winter now!

There's a sure, simple way for you to get ready for winter.

That is to winterize your Plymouth, Dodge, De Soto or Chrysler Cars and Dodge "*Job-Rated*" Trucks with MōPAR parts and materials. Then you can be sure of putting electrical and cooling systems in perfect shape for tough winter driving.

All MōPAR parts and materials meet exacting standards set by Chrysler Corporation engineers. They are factory engineered and inspected. So you know that MōPAR parts and materials are *made right* and *work right!*

The MōPAR name offers *complete assurance* of top quality performance to owners of cars and trucks built by Chrysler Corporation.

So get the upper hand on cold-weather driving. Winterize the MōPAR way. Order your parts *now*, before cold weather arrives.

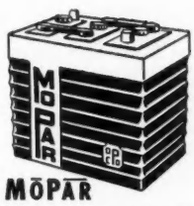
Chrysler Corporation • Parts Division • Detroit 31, Michigan

Here's where to go for MōPAR "Winterizers"

You can get MōPAR winterizing parts and materials from your nearest Plymouth, Dodge, De Soto or Chrysler dealer. Call on him today.

"WINTERIZE"

electrical and cooling systems with MōPAR parts!



MōPAR Power Line Batteries

MōPAR Evr-Dry Shielding

MōPAR Cooling System Cleaner

MōPAR Fan Belts

MōPAR Service Packages

also

- **MōPAR Battery Cables**
- **MōPAR Rust Resistor**
- **MōPAR Radiator Stop Leak**
- **MōPAR Radiator Hose**
- **MōPAR Heater Hose**

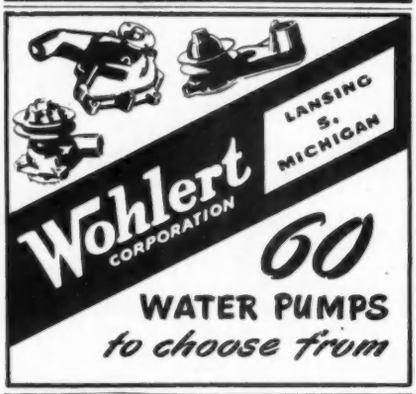
USE CHRYSLER CORPORATION PARTS DIVISION
MōPAR
TRADE MARK
PARTS AND ACCESSORIES
FACTORY ENGINEERED AND INSPECTED

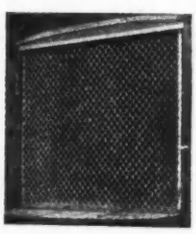
Factory Engineered and Inspected for

PLYMOUTH · DODGE
DE SOTO · CHRYSLER CARS
DODGE "Job-Rated" TRUCKS

Available Trucks
1½ TO 50 TONS
TRUCKS • TRACTORS
TRAILERS • BUSES
(SINCE 1910)
TELEPHONE—BRUNSWICK 1100
AVAILABLE TRUCK CO.
2501 ELSTON AVE.—CHICAGO 47, ILL.

BIG NEWS!
DECALS can now be bought economically in quantities as
LOW AS TEN PIECES!
Costs less than hand lettering—does not tie-up equipment.
Write for particulars.
(Some territories open for agents.)
EXCELLO SPECIALTY CO.
4101 E. 100th St. Cleveland 5, Ohio


Wohlert CORPORATION
LANSING 5, MICHIGAN
60
WATER PUMPS
to choose from

ZEHR
COLLAPSIBLE TRUCK BACKS

Safe . . . easy and simple to handle Zehr Truck Backs are all-welded steel designed for great strength and long continuous service.
They are theft-proof, rust-proof and flexible.
Write for details and prices.
ZEHR PRODUCTS COMPANY
2130 East Hazzard Street, Philadelphia 25, Pa.

MORE POWER ON THE UPGRADES MEANS FASTER SCHEDULES
HALL-SCOTT
"400" ENGINE
Hall-Scott Motor Division
ACF-Brill Motors Company
Berkeley 2, California

FRINK SNO-PLOWS
REG. U.S. PAT. OFF.
Both "V" TYPE and ONE WAY BLADE TYPE
hand or power hydraulic control
FOR ALL MOTOR TRUCKS FROM 1½ to 10 TONS
CARL H. FRINK, Mfr., CLAYTON, 1000 Isl., N. Y.
DAVENPORT-BESLER CORP., DAVENPORT, IOWA
FRINK SNO-PLOWS OF CAN. Ltd., TORONTO, ONT.

CCJ Newscast

(CONTINUED FROM PAGE 198)

tomotive Safety Foundation. Each station, network or program chosen for an award will receive a suitably engraved plaque. The sponsor also will be honored with a special citation.

All types of programs designed to promote public interest and activity in traffic accident prevention may be entered for the awards. Closing date for the entries is March 1, 1949.

CHEVROLET TRUCK SHOW

Eighty-two independent exhibitors, ranging from tool and equipment manufacturers to body specialists, helped to assure the success of the regional truck and service equipment show sponsored by Chevrolet Motor Division of General Motors at Philadelphia's Commercial Museum, Sept. 20 to 24. Early count at the gate indicated that attendance would exceed the anticipated figures and interest in all exhibits was high.

TRAFFIC DEATHS DOWN

The National Safety Council has reported that despite an eight per cent increase in travel, deaths in the first six months of this year were four per cent below the same period of 1947. The first half of 1948 established a record low rate of 7.2 deaths for each 100 million vehicle miles of travel. Deaths totaled 13,690, compared with 14,250 in the same period of 1947.

(TURN TO PAGE 202, PLEASE)

Gatke
CUSTOM-BILT
BRAKE LININGS
BLOCKS SETS ROLLS SHEETS
GATKE CORPORATION
248 N. La Salle St., Chicago 1, Ill.

KINNEAR Rolling Doors

On truck bodies or buildings, Kinnear Doors are efficient, dependable, economical. Steel-slat curtain coils upward, out of way. Any size; motor operation if desired. Write for details.
THE Kinnear Manufacturing Company
2100-20 Fields Avenue, Columbus 16, Ohio

America's Leading HEAVY-DUTY TRUCK Manufacturers Standardize on LIPE CLUTCHES

★ for more miles between teardowns!
★ for less wear and tear on the truck!
★ for easier maintenance and replacement!
LIPE-ROLLWAY CORP.
SYRACUSE, N.Y.

OLTMAN-O'NEILL
all-steel, all-welded
VAN TYPE BODIES
and Packettes — America's most outstanding Truck Body values — are immediately available. Sold through dealers only. Write or wire for franchise data.
OLTMAN-O'NEILL CO.
23500 Sherwood Ave., Centerline, Mich.
(Suburb of Detroit)

It's rumored that . . .
more than 1,500 fleets are now using Perfect Circle's Fleet Survey Plan!
Right, and with its help, they've been able to cut operating and maintenance costs. For information on how the Fleet Survey Plan can help *you*, see your P.C. representative or write: Perfect Circle Corporation, Hagerstown, Ind., or The Perfect Circle Company, Ltd., Toronto, Ont.

It Pays to Buy the Best

A SURE HIT IN THE CLEAN-UP SPOT •

... wix ENGINEERED FILTRATION

•

YOUR BEST BET FOR LONG, TROUBLE-FREE RUNS WITH REALLY *CLEAN* MOTOR OIL

wix

TRADE MARK

FILTERS AND FILTEREFILS

WIX ACCESSORIES CORP'N • GASTONIA • N•C•

CANADIAN FACTORY: WIX ACCESSORIES CORP., LTD., 11 Wabash Ave., Toronto 3, Ont.

OVER 70% OF ALL MAKES OF TRUCKS AND BUSES ARE *Zollner* EQUIPPED
ZOLLNER
HEAVY DUTY PISTONS
ZOLLNER MACHINE WORKS FORT WAYNE, IND.

THE COMPLETE LINE that Completely Satisfies
Since 1906
The Fitzgerald Mfg. Co.
Torrington, Connecticut
Fitzgerald
GASKETS

DAYTON Spoke Type Steel
WHEELS
AIR-COOL
BRAKE DRUMS AND TIRES
FOR TRUCKS, TRAILERS AND BUSES.
THE DAYTON STEEL FOUNDRY CO.
DAYTON, OHIO

SERVICE-PROVED
YEARS of toughest service prove Blackhawk Hydraulics superior in safety, rugged dependability and utility. "Service-Proved" Seal found only on Blackhawks. Only complete line of hydraulic hand jacks—models up to 100 tons capacity.
BLACKHAWK MFG. CO.
Dept. J-11106, Milwaukee, Wis.
BLACKHAWK

CCJ Newscast

(CONTINUED FROM PAGE 200)

DISABLED WORKERS HAVE FEW ACCIDENTS, HIGH OUTPUT

Disabled workers in the transportation industry, when properly placed, make slightly better employment records than their able-bodied fellow workers, according to a study prepared by the U. S. Bureau of Labor Statistics for Veterans Administration.

The survey matched the work performances of some 11,000 impaired and 18,000 unimpaired employees in most major industries throughout the country.

Of the disabled workers, 1608, or 14.6 per cent, were employed in the field of transportation other than automotive. They held positions such as machinists, machine tool operators, trainmen, locomotive electricians and airplane mechanics.

The BLS survey disclosed the following:

1. Handicapped workers suffered fewer serious accidents than the able-bodied.
2. The disabled experienced the same number of minor injuries as their able-bodied fellow workers.
3. Production records of the impaired were higher than records of the unimpaired.
4. The disabled were absent from work more frequently than the able-bodied but by only an insignificant margin.
5. The voluntary quit rate of the handicapped was higher than the rate of the able-bodied.

According to the study, impaired workers experienced 8.9 serious disabling accidents per 1,000,000 man-hours worked, compared with 9.5 accidents for the able-

(TURN TO PAGE 204, PLEASE)

There is a
QUICK AID FIRE GUARD
For Every Fire Hazard
Carbon Dioxide • Vaporizing Liquid
Foam • Soda-Acid • Pump
Underwriters' Approved
THE GENERAL DETROIT CORP.
DETROIT 7, MICHIGAN

YOU CAN DEPEND ON
McCORD GASKETS
MOST CAR AND TRUCK MAKERS DO
McCORD CORPORATION
Detroit, Michigan
Gaskets . Radiators . Mufflers
Pipes and Oil Retainers

For Every
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Requirement
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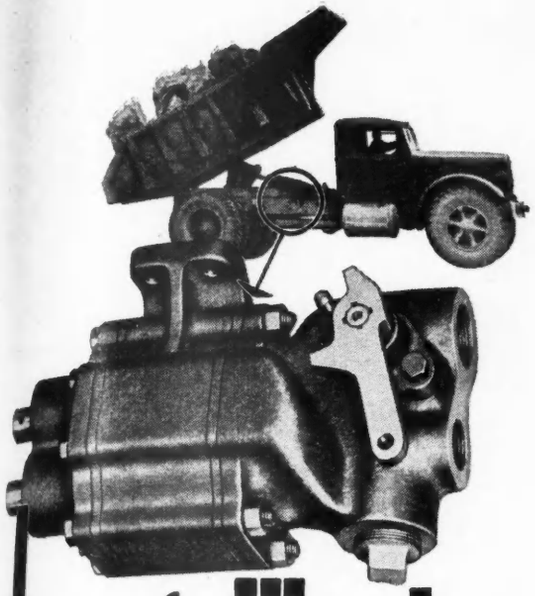

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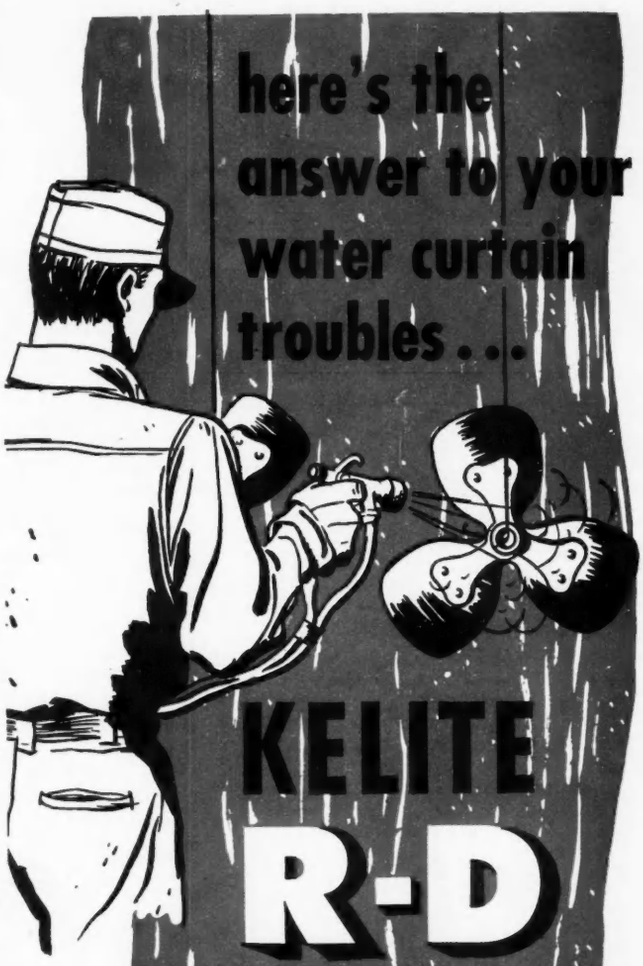

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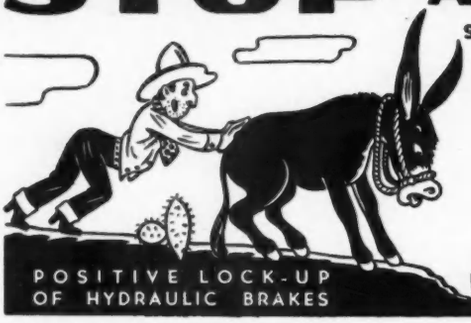

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CCJ Newscast

(CONTINUED FROM PAGE 202)

bodied. Of 172 mishaps revealed in work records of the disabled, none was serious enough to cause permanent and total disabilities. BLS attributed the safety record of disabled workers to the facts that impaired persons generally are more carefully placed and that, having impairments, are more safety-conscious.

The personnel director of one of the plants surveyed told an investigator, "Take a walk through my plant. You won't find the impaired fellows engaging in horseplay and chasing one another with air hoses. Of course they have a better accident record."

Nondisabling injuries—defined in the study as injuries not resulting in permanent impairment or loss of more than one day's work—were experienced at the same rate by the impaired and the unimpaired. The survey revealed that both groups lost 9.9 days per 10,000 man-hours worked.

Impaired workers made better production records than the unimpaired, the study showed. With the output of able-bodied workers established at 100, the disabled achieved a production record of 101. Nearly three-fourths of the handicapped workers produced at rates as good as, or better than, unimpaired workers on the same job.

The disabled were absent 3.8 days per 100 working days, compared with 3.4 days lost by the able-bodied—an insignificant difference, according to the study. The handicapped were absent for reasons of illness 1.5 days per 100 working days, while the unimpaired were ill 1.2 days per 100.

The termination rate of the disabled was 3.6 per 100 workers, compared with 2.6 for the unimpaired.

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